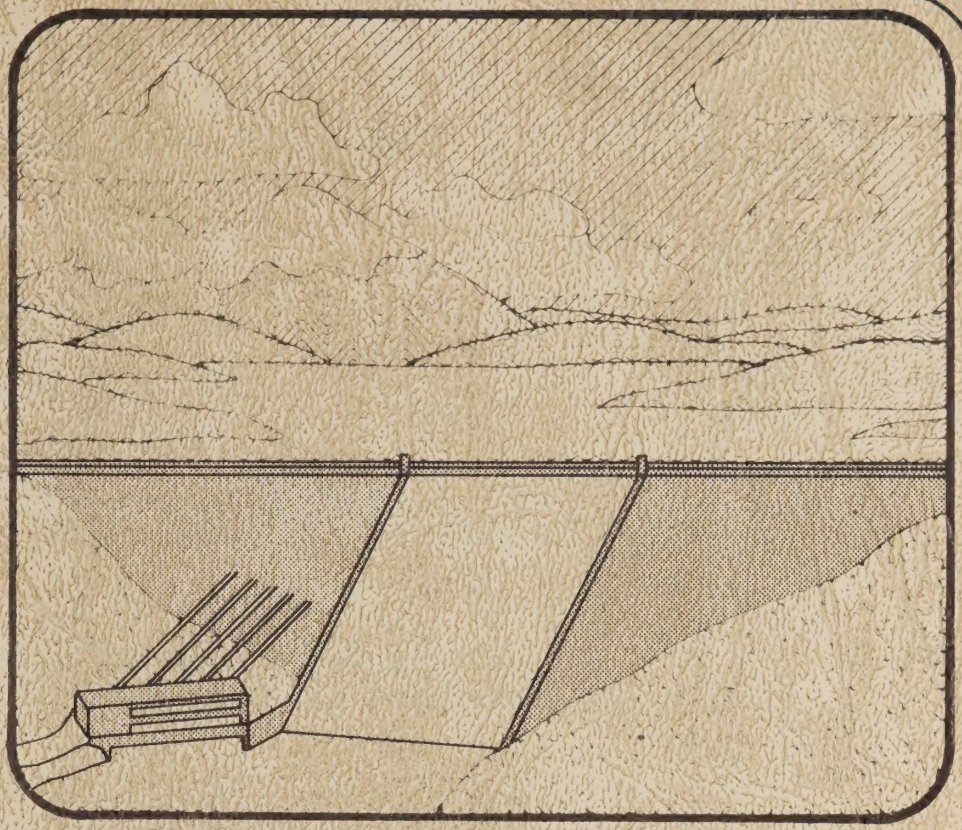


Shasta County General Plan

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SHASTA COUNTY GENERAL PLAN

Recommended for adoption by the Shasta County Planning Commission by Resolution No. 5997, January 5, 1984.

Adopted by the Shasta County Board of Supervisors by Resolution No. 84-11, January 10, 1984.

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GENERAL PLAN TEXT REVISIONS

Revision Date	General Plan Amendment No.	Resolution No.
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TABLE OF CONTENTS

Part One - Preface

	Page
INTRODUCTION	1
Purpose and Contents of a General Plan	1
The General Plan and the Regulatory System	4
Organization and Use	7
FRAMEWORK FOR PLANNING	9
Natural Environment	9
Man-Made Environment	11
Institutional Environment	13
Potential For Environmental Change	14
General Plan as a Response to Change	17
THE GENERAL PLAN CONCEPT	18
Objectives	18
Description of the Plan Concept	18
Interjurisdictional Approach to Planning Issues	29
IMPLEMENTATION	32
Implementing the Plan	32
Objectives	34

Part Two - Countywide Elements

PUBLIC SAFETY GROUP	41
Seismic and Geologic Hazards	42
Flood Protection	47
Dam Failure Inundation	51
Fire Safety and Sheriff Protection	54
Noise	61
Hazardous Materials	64
Air Quality	68
Water Quality	68
RESOURCES GROUP	69
Agricultural Lands	70
Timberlands	87
Minerals	94
Energy	99
Air and Air Quality	106
Water and Water Quality	112
Fish and Wildlife Habitat	115
Scenic Highways	122
Open Space and Recreation	129
Heritage Resources	138

Page

COMMUNITY DEVELOPMENT GROUP..... 142
Community Organization and Development Pattern..... 143
Economic Development..... 170
Housing..... 174
Circulation..... 181
Public Facilities..... 200

BOARD OF SUPERVISORS' RESOLUTION NO. 84-11..... 215

ACKNOWLEDGEMENTS..... 217

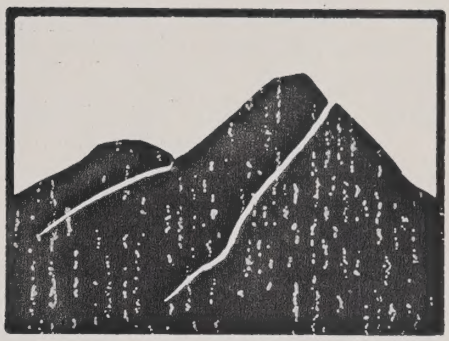
LIST OF TABLES

Table		Page
DI-I	Shasta County Dams Whose Failure May Result in Injury or Loss of Life.....	52
FS-1	Shasta County Fire Departments and Fire District.....	58
AG-1	Number and Size of Shasta County Farms.....	72
AG-2	Farms by Size.....	72
AG-3	Shasta County Farms by Value of Sales.....	74
AG-4	Principal Occupation of Farm Operators.....	75
AG-5	Farms With Operators Reporting Days of Work Off Farm.....	75
AG-6	Farms With Operators Providing Custom Farm Services for Others.....	75
AG-7	Minimum Parcel Size Requirements.....	81
T-1	Area of Commercial Forest by Ownership Class.....	89
T-2	Summary of California Timber Harvest.....	90
T-3	Resource Value and Parcel Size Requirements for List C Procedure.....	93
M-1	Mineral Resources Classification.....	97
E-1	Average Monthly Weather, Redding.....	101
E-2	Average Monthly Weather, Alturas.....	101
OSR-1	Shasta County Open Space Inventory.....	132
HER-1	Shasta County Heritage Resources.....	140
CO-1	Shasta County Land Resources.....	145
CO-2	Future Land Requirements for Residential and Employment Purposes.....	145
CO-3	Developable Land Supply.....	146
CO-4	Vacant Residential Lot Inventory in Shasta County.....	146
CO-5	Living Environments and Applicable Policies	163
CO-6	Residential Land Use Categories and Densities.....	165
CO-7	Commercial Land Use Categories and Policies.....	166
CO-8	Industrial Land Use Categories and Policies.....	169
PF-1	Allocation of CVP Water in Shasta County.....	202

LIST OF FIGURES

Figure		Page
PRE-1	Time Frame of Shasta County General Plan.....	3
PRE-2	Countywide General Plan Elements.....	5
PRE-3	Actual and Projected Population Growth in Shasta County.....	15
PRE-4	Community Organization.....	23
PRE-4A	Community Organization - South Central Region.....	25
PRE-5	Examples of Variable Lot Sizes Through Density Averaging.....	30
PRE-6	Planning Area Boundaries.....	35
FL-1	Floodplain Schematic.....	48
FS-1	Fire Hazard Severity Scale.....	56
N-1	Land Use/Noise Level Compatibility Criteria.....	63
E-1	Estimated 1980 Delivered Energy Use By Sector.....	100
E-2	Estimated 1980 Delivered Energy Use by Fuel Type.....	100
SH-1	Scenic Highways.....	123
OSR-1	Bicycle Trail Policy.....	135
CO-1	Interjurisdictional Planning.....	152
CO-2	Hypothetical Land Capability Matrix.....	155
C-1	Circulation Classifications of County Roads.....	194
PF-1	Shasta County Waste Disposal Facilities.....	209

Part One
PREFACE



PURPOSE AND CONTENTS OF A GENERAL PLAN

Introduction

Definition

A general plan is a long-range statement of local public policy primarily addressing the use of the privately and publicly owned land resources located within the government's jurisdiction. A general plan is not a detailed, parcel-specific, policy statement. Instead, it establishes a generalized pattern of future land use which provides the basis for more detailed plans.

Relation to Existing Land Uses

A general plan will not always reflect the existing land use pattern, and its function should not be confused with that of an existing land use map. An existing land use map is a parcel specific documentation of land uses as they now exist or existed at some other time. In contrast, a general plan describes a generalized and nonparcel-specific land use pattern and it does not represent a particular point in time. Accordingly, existing land uses are not always reflected in a general plan. In some instances, the plan may ignore individual, small scale differences in land use and present a generalized picture which represents the dominant land use character of an area. In other instances, the plan may show the transition of an existing land use to a new, different land use. Finally, the general plan attempts to show land use over a relatively long time period, in this case 20 years.

Relation to Zoning

The General Plan should also not be confused with the zoning ordinance map. A zoning ordinance map is a parcel-specific statement of how lands may be used in the present and the near future. As a legal instrument, the zoning map has immediate force and effect. In contrast, the General Plan is a generalized, long-term statement of land use. The function of a general plan is to provide a policy framework that must be reflected in the zoning ordinance and specific plans, which are the primary mechanisms for implementing the Plan policies.

The plan should contain policies governing the location of small scale uses; and it will be necessary to exercise judgment in interpreting these policies. The Plan will not provide automatic, locationally precise answers in all cases, but may require interpretation of plan policies in certain instances.

Time Frame

A general plan looks beyond the present and the immediate future and addresses some reasonable period of time. Traditionally, general plans were end-state oriented; that is, they projected an ultimate land use pattern and established an arbitrary date for its achievement. End-state general plans presented many problems; the most significant of which was unresponsiveness to changing conditions and the difficulty of implementing an end-state land use pattern which provided little or no guidance concerning the day-to-day phasing of development.

End-state plans have largely been replaced by plans using time frames of 10, 15 or 20 years. The Shasta County General Plan reflects a twenty year time period. To provide for flexibility and responsiveness to change, the Plan also requires a comprehensive review and revision at five year intervals. This periodic update will allow the Plan to always maintain at least a 15 to 20 year time frame, as shown in Figure PRE-1.

It must be emphasized that periodic review of the Plan is not synonymous with total overhaul. Once adopted, the Shasta County General Plan establishes a basic policy framework which must be followed. The purpose of reviewing the Plan every five years is to allow it to adjust in response to changing conditions, the availability of more recent planning data, and shifts in community values. Only under the most extraordinary circumstances, such as a major local disaster, a national emergency, or the complete failure over a long span of time to periodically review the Plan, will a thorough and total overhaul be necessary.

Public Policy Statement

The General Plan is a statement of public policy reflecting the aspirations and values of Shasta County residents which is adopted by their elected representatives. In keeping with California's strong tradition of local government autonomy, the general plan charges the residents of a community with the responsibility to directly decide the particular nature and quality of their immediate living environment. The General Plan is a mechanism by which a community may articulate its values, determine their relative importance, and assess their comparative long-term implications. There are no correct, right, or ideal general plans, but only plans which more or less reflect a particular set of values. Once adopted, the Plan becomes the basis for day-to-day decisions by elected and appointed officials. By this means, the values reflected in the General Plan shape and form the community and the quality of life sought by its residents.

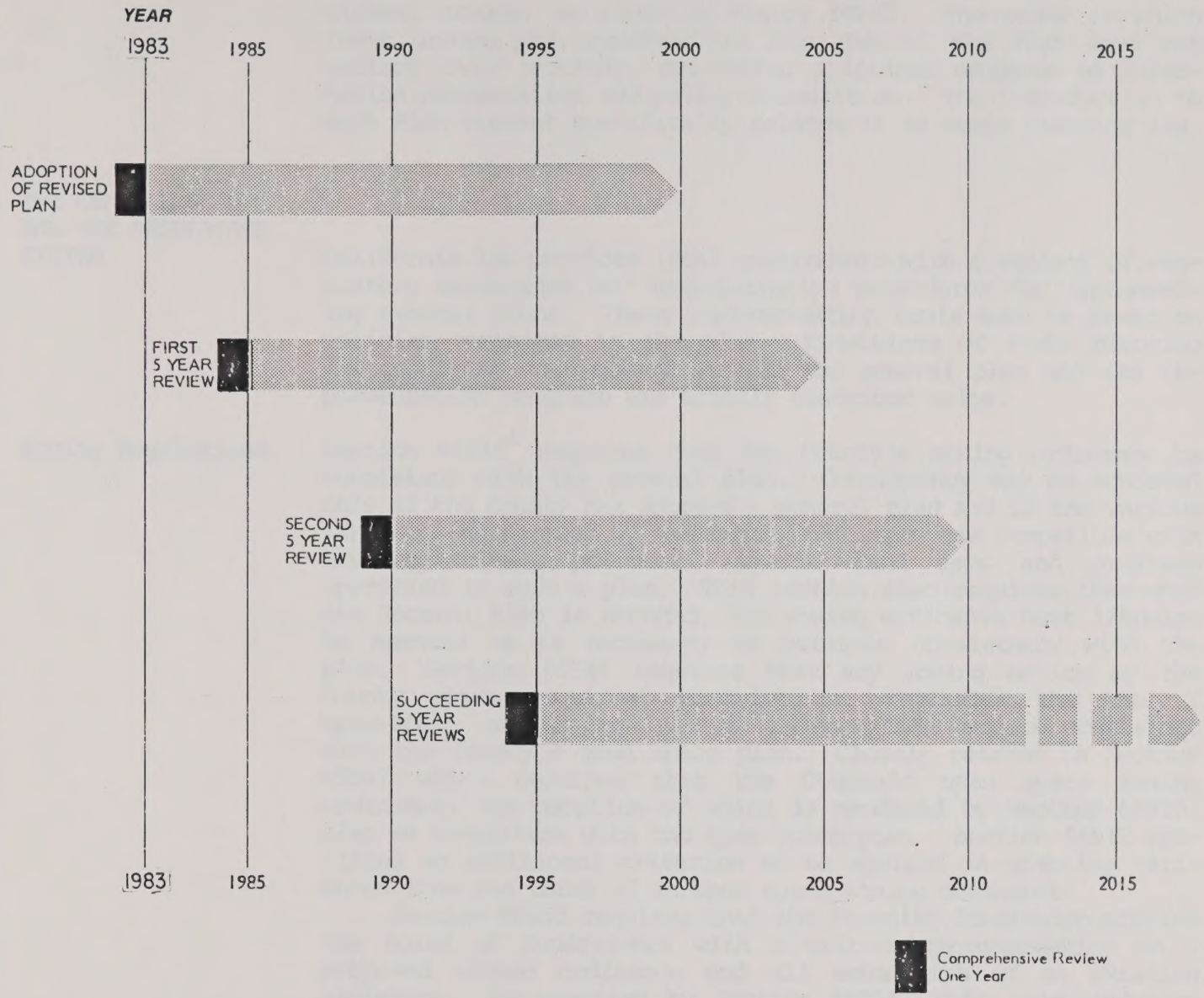
Citizen Participation

The Shasta County General Plan reflects the participation of citizens serving on the Countywide Planning Advisory Committee (CPAC). After soliciting applications through a self-nominating process, the Board of Supervisors appointed 47 persons to this committee. Its representation included geographic areas of the County and Countywide interests. Also serving on CPAC were members of the Board of Supervisors and the Planning Commission. Over approximately one year, CPAC held nine meetings at various locations in the County. Minutes of these meetings and attendance records are available from the Planning Department. All meetings were held on Saturday and were well attended.

Contents

Although a general plan is primarily concerned with land use decisions, land use is intimately related to other subjects which must also be considered in the planning process and the general plan. The subject areas which are addressed by the Shasta County General Plan are diagrammed in Figure PRE-2. State planning law requires the inclusion of some of these elements in the General Plan and permits the inclusion of other elements at the discretion of the community. Mandatory and optional elements are indicated in Figure PRE-2.

FIGURE PRE-1
Time Frame of Shasta County General Plan



State planning law also permits the combination and grouping of elements and expressly provides that their degree of specificity and level of detail must reflect local conditions and circumstances. The Plan elements have been arranged in three element groups, as shown in Figure PRE-2. The order in which these groups are presented in Part Two of the Plan does not reflect their priority, but rather a logical sequence of information presentation and policy formulation. The introduction to each Plan element specifically relates it to state planning law.

THE GENERAL PLAN AND THE REGULATORY SYSTEM

California law provides local governments with a variety of regulatory mechanisms and administrative procedures for implementing general plans. These implementation tools must be based on policies contained in the plan. Provisions of state planning law requiring consistency between the general plan and its implementation programs are briefly described below.

Zoning Regulations

Section 65860[1] requires that the County's zoning ordinance be consistent with its general plan. Consistency may be achieved only if the County has adopted a general plan and if the various land uses authorized by the zoning ordinance are compatible with the objectives, policies, general land uses and programs specified in such a plan. This section also requires that when the General Plan is amended, the zoning ordinance must likewise be amended as is necessary to maintain consistency with the plan. Section 65566 requires that any zoning action by the County which acquires, restricts or regulates the use of open-space land or any interest in such land must be consistent with the County's open space plan. Closely related is Section 65567 which requires that the County's open space zoning ordinance, the adoption of which is mandated by Section 65910, also be consistent with the open space plan. Section 65911 specifies an additional criterion to be applied in granting variances from the terms of an open space zoning ordinance.

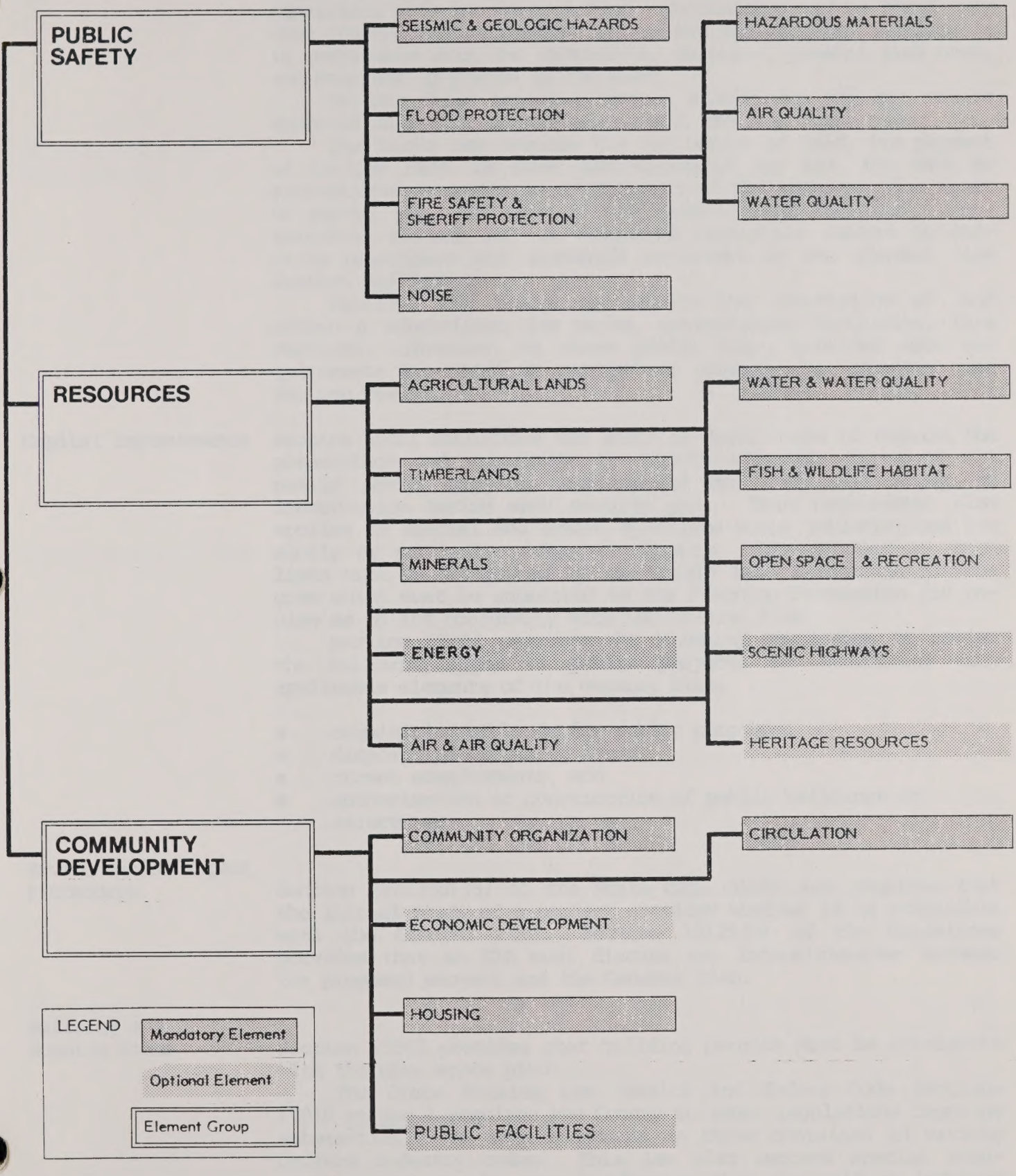
Section 65853 requires that the Planning Commission provide the Board of Supervisors with a written recommendation on a proposed zoning ordinance and all amendments of an existing ordinance. As required by Section 65855, this recommendation must include a discussion of the relationship of the proposed ordinance or amendment to the General Plan.

State law has not yet addressed the issue of consistency between the General Plan and the various discretionary land use entitlements available under the zoning ordinance, i.e., variance, use permit, planned unit development, and design review. The one court decision (Hawkins v. County of Marin (1976) 54C.A.3d 586), that could offer some guidance in this area, is subject to differing interpretations.

---

[1]Unless otherwise indicated all references are to the Government Code.

FIGURE PRE-2
Countywide General Plan Elements



Subdivision Regulations

Section 66473.5 and 66474 provides that the County shall not approve a proposed subdivision map unless it finds that said subdivision, including its design and proposed improvements, is consistent with the General Plan. Consistency may be found only when the County has adopted a plan and the proposed subdivision is compatible with the objectives, policies, general land uses, and programs specified in the plan.

Section 65567 requires that a subdivision map may not be approved unless it is consistent with the open space plan.

The County may require the dedication of land, the payment of in-lieu fees, or some combination of the two, for park or recreational purposes as a condition of the approval of a final or parcel map, but only if the General Plan contains a recreational element and the dedicated facilities conform to definite principles and standards contained in the element (see Section 66477(d)).

Finally, the County may require the reservation of land within a subdivision for parks, recreational facilities, fire stations, libraries, or other public uses, provided such requirements are based on appropriate general plan elements (see Section 66479).

Capital Improvements

Section 65401 authorizes the Board of Supervisors to require the preparation and submission by County officials lists of all public works projects recommended by them for study or construction during each ensuing year. This requirement also applies to special and school districts whose jurisdictions lie wholly or partially within the County. Upon submission, such lists must be integrated by the County into a coordinated program which must be submitted to the Planning Commission for review as to its conformity with the General Plan.

Section 65402 requires the Planning Commission to review the following types of public projects for conformity with applicable elements of the General Plan:

- acquisition of lands for public purposes,
- disposition of public lands,
- street abandonments, and
- authorization or construction of public buildings or structures.

Environmental Impact Procedures

Section 15063(d)(5) of the State CEQA Guidelines requires that the initial study of a project consider whether it is compatible with the General Plan. Section 15125(b) of the Guidelines provides that an EIR must discuss any inconsistencies between the proposed project and the General Plan.

Building and Housing Codes

Section 65567 provides that building permits must be consistent with the open space plan.

The State Housing Law (Health and Safety Code Sections 17910 et seq.) requires the County to adopt regulations imposing substantially the same standards as those contained in various uniform industry codes. This law also imposes special standards, which may be more burdensome than the uniform industry

codes, designed to protect against certain types of hazards (fire, noise, earthquakes, unstable soils) and to achieve certain resource goals (energy conservation). The County may adopt regulations and standards at variance from those mandated by the State Housing Law if justified by local conditions. Although not explicitly required by the State Housing Law, the General Plan is an especially appropriate vehicle for documenting such local conditions and specifying the necessary regulatory response in order to justify variances from state law.

Other Consistency Requirements

Listed below in capsule form are other consistency requirements contained in state law which at some future date may apply to Shasta County:

- Health and Safety Code (HSC) Section 33331, consistency between General Plan and redevelopment plan.

- HSC Section 34326, consistency between General Plan and housing projects.

- HSC 34711, consistency between General Plan and housing for developmentally disabled, mentally disordered, and physically disabled.

- Streets and Highway Code Section 32503, consistency between General Plan and parking facilities.

ORGANIZATION AND USE

The General Plan consists of text and maps. The text is organized into three parts. Part One - Preface contains four sections - Introduction, Framework for Planning, The General Plan Concept and Plan Implementation. Included in the Concept section is an overview of the General Plan concepts, and diagrams illustrating these concepts.

Part Two of the Plan contains the General Plan elements which are universally applicable throughout the County. As illustrated in Figure PRE-2, the Countywide Elements are organized into three groups: Public Safety, Resources, and Community Development.

Part Three of the Plan is the technical appendices that contain additional required background data for some of the Plan elements. This includes the population, housing and employment projections and studies on air quality, noise and housing.

In addition to these parts of the Plan, another document is available which contains the background reports and data used to develop the Plan including the EIR, but which is not required to be a part of the Plan.

Key Terms

Certain key terms are used repeatedly throughout the text and their meaning is required in order to use the Plan. These key terms are described below.

A goal is a broad, generalized expression of commonly held community values. Since a goal is broadly stated, disagreement regarding it tends to be uncommon. Objectives are similar to goals and frequently the two terms are used interchangeably. As used in the General Plan, however, an objective is a more nar-

rowly drawn and concrete expression of community intent. One goal may imply two or more objectives, each responsive to a particular aspect of a more broadly stated goal. For example, a community goal might be "Protection of natural resources." A related objective could be "Prevention of erosion which leads to loss of soils, degradation of water quality, and destruction of wildlife habitats." Other objectives related to this goal might address air quality, nonrenewable energy resources, prime agricultural lands, to cite a few.

A policy is a precise statement of how public regulatory powers and fiscal resources will be exercised and allocated to achieve a specific objective. Policies may be expressed in text, maps, diagrams, or some combination thereof. Since they are tangible, they often can be quantitatively measured. It is important to note that some polices are more specific than others. Examples of polices relating to the previous examples of goal and objective include, "Construction practices shall provide for the impoundment of storm waters and removal of sediment prior to discharge into creeks," and "Development shall not be permitted on highly erosive soils when slopes exceed 15%" (or some other specified limit).

The policies contained in the Plan are expressed in terms of shall or should. There is an important distinction between these two terms. As used in the Plan, shall indicates an unequivocal commitment, while should indicates a guide toward accomplishing a long range goal.

The final link in the chain running from an objective to its physical realization is provided by implementation. Although implementation is commonly spoken of in terms of programs implying a long-term effort, it may be of much shorter duration and simply be referred to as a measure. In any event, implementation programs and measures are concerned with the specific actions necessary for accomplishment within a definite time. Examples of implementation programs include revision of the zoning and grading ordinances or the development standards.

Framework For Planning

The following discussion briefly outlines the framework for the development and utilization of the Shasta County General Plan. Four interlocking components form this framework. They are:

- the natural environment,
- the man-made or built environment,
- the institutional environment, and
- the potential for environmental change.

The term "framework for planning" is used here because these four elements define basic planning opportunities and constraints which must be addressed by the Shasta County General Plan. Understanding and intelligently responding to this planning framework is essential to the short and long-term success of the General Plan. The discussion below provides an introduction to the more detailed treatment of the components of this framework in the various Plan elements.

NATURAL ENVIRONMENT

The natural environment includes all factors in man's surroundings that are the product of natural rather than man-made forces and interactions. Major factors of the natural environment are:

- landforms,
- water,
- climate,
- minerals,
- soils,
- vegetation, and
- wildlife.

These factors are fundamental to the planning framework because they define the limits within which the man-made and institutional environments must operate.

Landforms

Shasta County is situated where the Central Valley of California meets the convergence of the Klamath and Coastal Mountain Ranges to the northwest and west, with the Cascade Mountain Range to the northeast and east. Elevations in the Central Valley area of Shasta County range between 400 and 500 feet. The Cascade Range divides the Central or Sacramento Valley region of the County from the Modoc Plateau situated in its northeast corner. In the interest of using common nomenclature, the Modoc Plateau will be referred to as the Fall River Valley. Approximate elevation of this valley is 3,300 feet.

Water

The landforms of Shasta County and their underlying geology exert a major influence on its surface and groundwater resources. The Central Valley and its southward flowing Sacramento River provide the drainage for all the major streams in the County - Squaw, Clear, Cow, Cottonwood, Battle, Clover, Bear, and Hat Creeks, and the Pit, Fall, and McCloud Rivers. Alluvium deposits in the Sacramento and Fall River Valleys define the only significant groundwater basins present in Shasta County; but there are also numerous "hard rock" groundwater basins of unknown productivity.

Climate

The landforms of Shasta County also play a role in determining its climate. The convergence of the mountains on either side of the Central Valley forms a funnel that concentrates precipitation near the upper end of the valley in periods of winter storms marked by south winds. The western mountains receive significant amounts of rain from air moving eastward off the Pacific, while the eastern mountains generally receive less precipitation. Temperature is closely related to elevation, with the warmest temperatures at lower levels. The length of the growing season also reflects this temperature pattern. Comparing the climates of the two major valley areas of the County, the Central or Sacramento Valley experiences a longer growing season and more rainfall than the Fall River Valley.

The two valley areas are located within different air basins: the Sacramento Valley Air Basin and the Northeast Plateau Air Basin. In the Sacramento Valley Basin, the potential for winter radiation inversions is high, resulting in stable atmospheric conditions.

Minerals

Shasta County is rich in mineral resources, including copper, gold, silver, zinc, sand and gravel, and diatomite. Most of the metallic ore lies in western Shasta County. Sand and gravel deposits are associated with the Sacramento River and its tributaries. The junction of the Pit River and Hat Creek in northeastern Shasta County is the location of diatomite deposits.

Soils

Landform, climate, and other factors determine soil characteristics. Soil surveys of Shasta County cover areas outside of the National Forests and use a standard classification system ranging from Class I, soils with few limitations, to Class VIII, soils with limitations precluding their use for commercial agricultural purposes. Of those areas of the County which have been surveyed, the majority are Class III and worse. Areas with Class I or II soils are located almost exclusively in the Sacramento and Fall River Valleys.

Vegetation

Landform, climate, soils and other factors are responsible for the natural vegetative cover of Shasta County. Coniferous forest is the predominant vegetation in the mountainous regions of the County, but in many areas this cover has been modified by man's activities. Extensive man-caused modification has also occurred in the Sacramento and Fall River Valleys. These areas are characterized by cultivated and pasture lands, oak woodlands, and grasslands. Rare and endangered plant species are found in Shasta County.

Wildlife

The major wildlife resources of the County include deer, waterfowl and fish. Man's activities have also resulted in modifications in their habitat areas and thus their geographic distribution throughout the County. Deer winter range areas are found outside the Sacramento and Fall River Valleys in the lower elevations of the mountain areas of the County. The Sacramento River and Clear, Cottonwood, and Battle Creeks are important salmon and steelhead areas. Excellent trout streams include the Upper Sacramento, McCloud, Pit, Fall and Rising Rivers and Squaw, Kosk, Cow, Hat, Hatchet and Battle Creeks. The Fall and Sacramento Rivers are also major waterfowl habitat areas. There are numerous and rare endangered animal species known to inhabit Shasta County.

MAN-MADE ENVIRONMENT

The man-made environment is defined as physical modifications of the natural environment caused by man. Major factors of the man-made environment are:

- urban/suburban and rural residential areas,
- transportation networks,
- water impoundments, and
- cultivated areas.

Urbanized Areas

The areas of Shasta County which are the locations of urban/suburban development correspond closely with the natural factors of landform, water, climate and soils. Urbanization and its associated suburban development has occurred in the Sacramento, Fall River, and Burney Valleys where the level topography and soil conditions allow the relatively easy construction of residential, commercial, industrial, and other urban structures and their street circulation systems; surface and groundwater are available for urban water supply systems; and climatic, soil, and surface water conditions permit the construction of some type of urban wastewater treatment system.

Approximately 83 percent of the County's population lives in the Sacramento Valley area of the County in a north-south band of urban/ suburban communities, including the Shasta Dam Area (Central Valley, Toyon, Summit City, Project City, and Pine Grove), the incorporated cities of Redding and Anderson, and the unincorporated community of Cottonwood. Around this urban/ suburban band are several smaller communities including Mountain Gate, Jones Valley, Bella Vista, Palo Cedro, Happy Valley, Centerville, and Shasta/Keswick. Approximately 7 percent of the County lives in unincorporated urban/suburban and rural communities in northeast Shasta County. These communities are Burney/Johnson Park, Fall River Mills/McArthur, Cassel, and Hat Creek.

Combined, the Sacramento Valley area and the northeast portion of the County account for 90 percent of the County population and represent major public and private investments in the facilities and services required by urban development.

Transportation Network

The major element of the transportation network of Shasta County is the north-south transportation corridor through the Sacramento Valley. Contained within this corridor are Interstate 5, the Southern Pacific Railroad, Redding Municipal Airport, hydroelectric power transmission lines, and the Sacramento River, an important transportation component of the Federal Central Valley Project. It must be noted that this corridor is a link in a much larger corridor running the entire length of the west coast of the United States and connecting many metropolitan areas in California, Oregon, and Washington. Events occurring in these other areas will be transmitted via this north- south corridor and will inevitably affect Shasta County in general and its Sacramento Valley area in particular.

The other major elements of the transportation network are State Highway 299 connecting the Sacramento and Fall River Valleys; State Highway 44 connecting the Sacramento Valley with Lassen Volcanic National Park; and State Highway 89 which links the Park with the Fall River Valley. In general, this transportation network does and will continue to reflect factors in the natural environment, most directly topography and climate.

Water Improvements

Many of the surface water resources of Shasta County have been impounded by man for a variety of purposes, including flood control, power generation, domestic and agricultural water supply, and recreation. The dominant natural factors here are surface water and topography. Major improvements and associated facilities are Shasta Lake, Whiskeytown Lake, the ACID Diversion Dam and canal, Keswick Lake, the Pit River Dams, Lake McCloud and Big Lake. There are approximately 325 smaller reservoirs throughout the County.

Cultivated Areas

Cultivated areas of the County are defined as areas where man has altered the natural environment to produce food, fiber, and building materials. Cropland areas of the County are generally limited to the Sacramento and Fall River Valley areas and to the irrigated meadows of the Cascade Range. The Western and Eastern Upland areas located on either side of the Sacramento Valley are grazing areas. Timber harvesting is concentrated in the mountain areas.

Interaction of Natural And Man-Made Environments

The physical interactions between factors of the natural and man-made environments provide the dynamics of the planning process. In order for this process to result in a successful plan, the nature of these interactions must be understood. Failure to achieve this understanding and to apply it to the planning process could result in a plan which is costly to implement, both in private or public costs, creates an undesirable living environment, or both. It is the institutional environment of Shasta County, discussed below, which provides the context for reaching decisions concerning these relationships.

INSTITUTIONAL ENVIRONMENT

The factors of the institutional environment may be categorized as:

- social
- economic
- governmental.

The following discussion of these categories focuses on the role of the institutions as mechanisms for formulating and expressing values regarding the use of the natural environment through the development of the man-made environment

Social

The primary social factors of Shasta County are the family, the community organization, the school, and the religious group. Frequently, various elements of these institutions overlap and their order of importance will vary from individual to individual. These institutions reflect fundamental social values which find expression in the types of communities and lifestyles desired by County residents. These desires have significant land use implications. These desires will vary from person to person according to age, income, date, place of residence and other factors.

Economic

The economy of Shasta County is based on the natural environment. Forest product harvesting and manufacturing, agriculture, and tourism are the major industries of the County. An industry which is also based on the natural environment and is of major consequence, is the division of raw or undeveloped land into lots for subsequent sale. Given their dependence on the natural environment, each of these industries has a vested interest in its future. A key distinction, however, is that forestry, agriculture and tourism use the natural environment as a renewable resource, while the land division industry treats the natural environment as a consumable resource. This distinction also has critical land use implications.

Governmental

Government provides a mechanism for reconciling competing interests regarding the use of the natural environment. In Shasta County, government operates at three levels - local, state, and federal.

At the local government level, the key actors are Shasta County and the incorporated cities of Anderson and Redding. These are general, as opposed to special, purpose local governments and they have direct legal authority over the planning and regulation of the use of lands within their jurisdiction. To an important degree, the planning and regulatory actions of the County and the two cities are dependent on the activities of special purpose local government agencies which indirectly affect land use decisions through the provision of services, such as water, sewer, or streets.

The state government operates at two different levels in Shasta County. One level is the exercise of direct control over lands it owns within the County, such as parks, wilderness areas, and other recreational facilities.[1] The other, more significant level operates through various state agencies concerned with transportation planning, air and water quality, solid waste management, water resources, fish and game resources, and, of course, the preparation and adoption of local general plans.

The federal government is a major landowner in Shasta County and lands owned by the federal government make major contributions to the agricultural, forest, and tourist industries. Therefore, federal policy regarding these lands has implications for the economy of the County.

Interaction of Man-Made, and Institutional Environments

The natural, man-made, and institutional environments define the overall framework within which the Shasta County General Plan must operate. The natural and man-made environments, are concerned with the physical pattern of land use as the result of the interaction of natural and man-made factors. The institutional environment assigns values to these factors and provides a process for their concrete application in defining and achieving a desirable land use pattern. However, these environments are not static and will change over time.

POTENTIAL FOR ENVIRONMENTAL CHANGE

The planning framework for Shasta County can and will change in response to changes in its constituent natural, man-made, and institutional environments. The following discussion briefly explores the potential for environmental change and its planning implications.

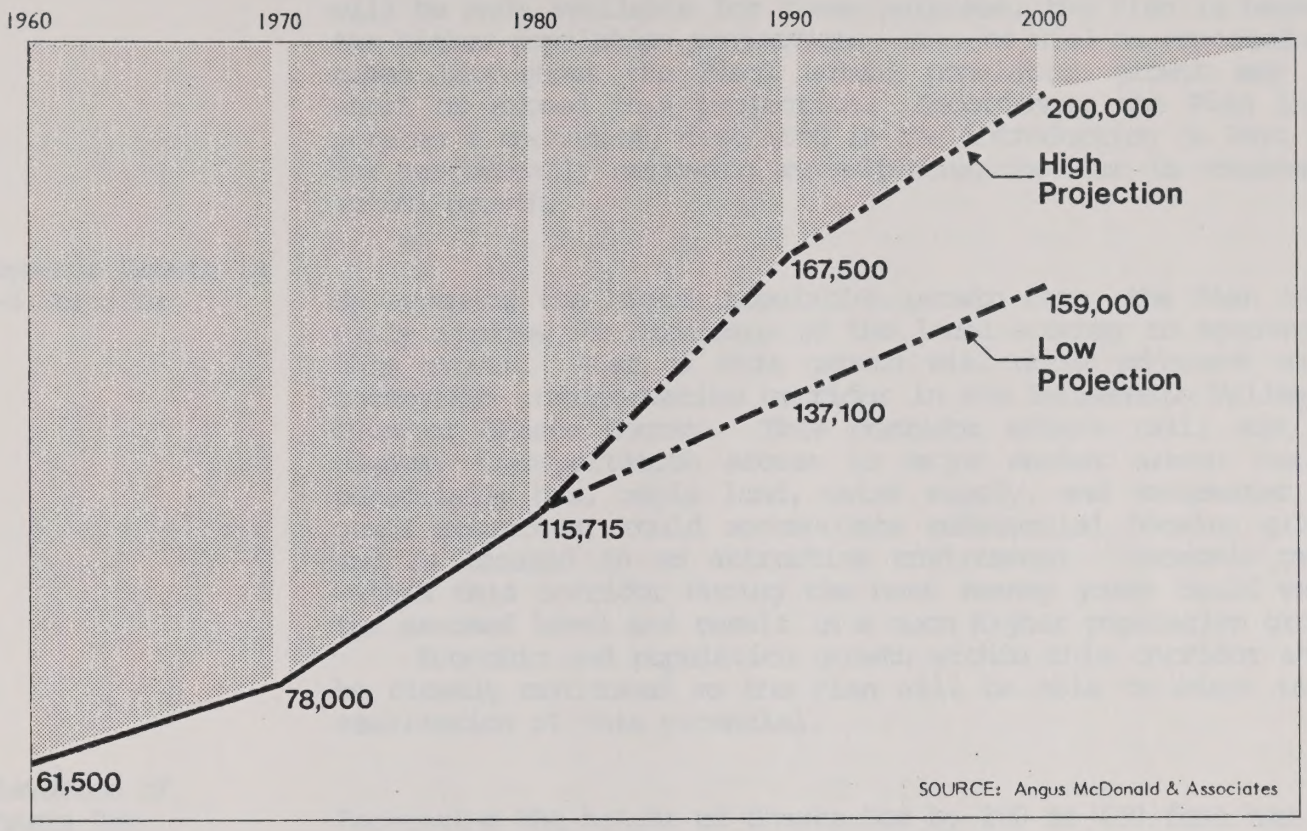
Population Growth

The population of Shasta County will increase; the issue is by how much and at what rate. Resolution of this issue will depend on many factors which do not lend themselves to prediction. For example, will retired persons continue to migrate to Shasta County and will the County continue to provide a refuge to families seeking to escape metropolitan areas and their attendant problems? If these and other trends continue, the population growth rate in the County will remain high. On the other hand, it may be that the growth rate will level off over the next two decades. Given these alternatives, it is possible to construct two population projections for Shasta County, as shown in Figure PRE-3. The technical basis for these projections is described in Appendix A.

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[1] By virtue of "supremacy" clauses of state and national constitutions, lands owned by state and federal agencies are not governed by local land use conditions.

FIGURE PRE-3
Actual and Projected Population Growth Shasta County



The land use implications of population growth are obvious ones; more people means that undeveloped lands will need to be developed to provide sites for housing, employment, and public services. To ensure that too much rather than too little land will be made available for these purposes, the Plan is based on the higher population projection. But, as will be repeated many times throughout the Plan, actual population growth may fall short or exceed this projection. Accordingly the Plan incorporates a mechanism, described in the introduction to Part One, for periodically reviewing and adjusting the Plan in response to actual growth.

Economic Growth in I-5 Corridor

By assuming the higher population growth rate, the Plan implicitly assumes the expansion of the local economy to accommodate this growth. Most of this growth will occur adjacent to the interstate transportation corridor in the Sacramento Valley region of Shasta County. This corridor offers rail, air, and highway transportation access to major market areas; has, or potentially has, ample land, water supply, and wastewater disposal resources; could accommodate substantial housing growth; and is located in an attractive environment. Economic growth within this corridor during the next twenty years could exceed the assumed level and result in a much higher population growth.

Economic and population growth within this corridor should be closely monitored so the Plan will be able to adapt to the realization of this potential.

Elevation of Shasta Dam

Increasing the height of Shasta Dam by 100 to 400 feet has been the subject of much discussion at the federal, state and local levels. If this were to occur, it would have short and long-term land use implications. Short-term implications would include an economic boom similar to that which occurred when the dam was constructed during the 1930's. Shasta County is still experiencing some of the adverse impacts of this boom period, such as deteriorating project housing and inadequate circulation in the Central Valley area. Without careful planning, the short-term impacts of this project on Central Valley and the entire Sacramento Valley region could be adverse.

Depending on the actual height to which the dam would be raised, the communities of Lakeshore and Lakehead, as well as Interstate 5 and the Southern Pacific Railroad, may need to be relocated. These relocations would have substantial long-range land use implications both for the areas now occupied by these man-made features and their relocation areas. Again careful planning will be required to avoid adverse impacts.

Construction of Dutch Gulch Reservoir

The U.S. Army Corps of Engineers has proposed the construction of a multi-use reservoir along Cottonwood Creek. The crest of the proposed dam would run in a north-south 3-1/2 mile arc located approximately 1-1/2 miles east of the intersection of Gas Point and Ridge Roads. Most of the area which would be flooded by the construction of the dam is now used for grazing.

This project would have major growth inducing impacts on the community of Cottonwood, located at the primary I-5 tourist access point to a recreation facility of statewide significance, and the Gas Point Road area. Growth inducing impacts also be experienced in those areas directly adjacent to the inundation area. The appropriate use of such lands pose major planning issues.

Revitalization of Mineral Extraction

From the origins of Shasta County until the end of World War I, mining was the major industry of Shasta County. Major reasons for the decline of mineral extraction were changes in the international economics of this industry and litigation resulting from adverse environmental impacts. Changes in the world economy and the development of new technologies designed to mitigate these impacts present the possibility for a revival of the mineral extraction industry. The General Plan should recognize this potential and be capable of responding to its land use implications.

Development of Energy Resources

Shasta County has experienced significant development of its hydroelectric energy resources and this development has played a major role in shaping the existing land use pattern of the County. The potential of other energy resources in the County, including natural gas, oil, geothermal, and low-head or small-scale hydroelectric, is being actively explored by major energy companies. Most of these exploration programs are of a proprietary nature and detailed information is generally unavailable. These activities have prompted some local observers to suggest that Redding has the potential to become an energy exporting center of national consequence. Development of the renewable and nonrenewable energy resources of Shasta County at this level would have a major impact on the County's economic and development pattern.

Auto Travel and Tourism

The tourist industry of Shasta County is dependent on the automobile to bring people to its recreation resources. It is difficult to forecast both the cost and availability of gasoline over the long term and how changes in these areas would impact recreational travel by auto. The planning implication here is that a decline in the tourist industry would require expansion of other areas of the County's economy and accompanying land use commitments.

GENERAL PLAN AS A RESPONSE TO CHANGE

The previous discussion of the planning framework of the General Plan concluded with a brief discussion of how this framework could change over time. The purpose of this discussion was to identify factors or subjects which currently appear to pose the greatest potential for changing this framework. Over time some of these factors should be deleted from this list and others added. One should not lose sight of the fact that the General Plan offers a means of anticipating changes before they occur and responding to them in a way which minimizes their adverse impacts and enhances their benefits. While the alternative of responding to change after it occurs is available, experience in Shasta County and elsewhere demonstrates that this is not a desirable alternative.

The General Plan Concept

This chapter describes the major ideas and proposals implicit in the objectives contained in each element of the Plan.

OBJECTIVES

The objectives of the General Plan are statements of community values regarding the future growth, development, and quality of life in Shasta County. Inclusion of these objectives in the Plan and the adoption of the Plan by the Board of Supervisors represents a commitment to the use of these objectives to guide future land use and land use related decisions in Shasta County. The Plan recognizes, however, that community values may change over time in response to events within and outside Shasta County. Accordingly, the Plan incorporates a mechanism for the periodic review, evaluation, and, if appropriate, revision of these objectives. The availability of this opportunity for future revision of the objectives should not weaken the long-term commitment implicit in the Plan objectives.

The objectives of the General Plan were formulated through a broad-based citizen participation effort representative of the wide range of perspectives and interests present in the County. A questionnaire and group discussion of planning issues were used to develop a preliminary statement of objectives which was reviewed by the citizen group and revised in response to comments.

The planning objectives contained in each element of the Plan provide the foundation for the overall concept of the General Plan which is described in this chapter. These objectives also provide the basis for the policies. All of the objectives are closely interrelated and these relationships require that they be applied comprehensively in making planning decisions.

DESCRIPTION OF THE PLAN CONCEPT

In comprehensively looking at the objectives, the relationships among them emerge in the form of major ideas or concepts. Many of these concepts can be expressed graphically as well as textually. This section of the Plan describes these major concepts and where possible uses maps or graphics to illustrate them. Taken as a whole, these concepts provide a summary or overview of what the Plan is attempting to accomplish and why.

There are five major ideas that provide the conceptual basis of the Plan. These concepts, which are discussed below, are:

- Growth accommodation as the means of preserving the quality of life, especially in rural areas.

- The geographic distribution and timing of growth and its relationship to public services.

- Recognition of the Plan as a decision-making tool requiring periodic review and revision.

- Growth accommodation among a variety of living environments.
- Interjurisdictional approach to planning issues.

Growth Accommodation and Quality of Life

Unquestionably, the most distinguishing characteristic of Shasta County is the quality of life enjoyed by its residents. Many terms are used to describe the nature of this quality of life, including rural living, small town atmosphere, or country life-style. The quality of life has and will continue to attract new residents to Shasta County. The irony of this situation is that the very attractiveness of this quality of life, if present trends are allowed to continue, could eventually lead to its destruction.

Over time, if present trends continue and more persons move to Shasta County seeking the quality of life it offers, problems will emerge in the areas of providing adequate water supplies and wastewater treatment facilities to rural homesites, the preservation of land resources sufficient to support the agriculture and timber industries, the ability of government to fund services adequate to ensure the public safety and welfare, the air and noise pollution and energy costs of an auto-dependent land use pattern, and the preservation of the scenic beauty of the County.

There are alternatives to the strategy of allowing present trends to continue. One strategy would be to strictly regulate land divisions and the amount of new residential construction. This approach has been used by some local governments to effectively control the growth of their communities. However, aside from constitutional issues, this approach results in inflated land values within the community, thereby excluding low and moderate income families and individuals, and some would argue it leads to economic stagnation. This approach is not followed by the General Plan.

An alternative strategy is one of growth accommodation. This strategy recognizes the growth a community will experience during a specified time period, typically twenty years, and plans that the land supply necessary to accommodate this growth will be available. At regular intervals during this time period, for example every five years, additional lands are added to the supply to ensure that at least a 15 year land supply is always available. The General Plan adopts this strategy of growth accommodation.

Growth accommodation in Shasta County is based on three facts. One, there exists within the County a land supply adequate to meet the amount of population and economic growth projected for the period 1981-2000, but this land supply is not uniformly distributed throughout the County. Two, County government, through the Plan and implementing regulations, may anticipate growth occurring in areas of the County where this land supply is available. Three, both the growth projections and the land supply inventory will require periodic review and revision over time to keep pace with changing conditions. Premises two and three form the basis of other major Plan concepts which are described below. Taken together, these concepts propose that by matching projected growth with the land supply inventory, growth may be accommodated while preserving the quality of life in Shasta County.

Geographic Distribution and Timing of Growth

Growth may be accommodated and the quality of life may be preserved in Shasta County if County government, through the General Plan and its implementing regulations, directs growth to areas of the County where and when the land supply is available to accommodate growth.

The geographic growth pattern contained in the General Plan is based on the following factors:

- The historic pattern of growth which has resulted in approximately 90% of the population of the County residing in 2 of the 10 planning areas (South Central Region - 83%; North East Shasta - 7%).

- The location of existing and potential unused capacity in community water supply and wastewater treatment systems.

- A hierarchy of community organization encompassing urban, town, and rural community centers.

- The location of agricultural and timber resources in the County.

Based on these factors, the General Plan recognizes the primary roles in accommodating new growth which will be assumed by the SCR and North East Shasta Planning Areas and their constituent Urban, Town, and Rural Community Centers. Specifically, the Plan programs more than a 20 year land supply in the SCR and North East Shasta areas sufficient to accommodate that portion of the projected 20 year population growth which will respectively give these areas 87% and 7% of the County's population.

This 4% increase over the SCR's current portion of the County's population reflects the fact that future major employment opportunities will locate in urban areas of Anderson and Redding and that the Rural Community Centers in the SCR are all served by community water systems. This increase is also designed to relax the development pressures on areas of the County which contain agricultural and timber operations.

Assigning 87% of the 20 year land supply to SCR does not mean that new residents of the County will be forced to live in an urban area. Although some will prefer this type of environment, others will not. Therefore, the Plan provides that the Rural Community Centers in SCR will provide a significant share of the developable land supply to accommodate persons desiring to live in a rural environment.

The developable land supply programmed for the North East planning area represents neither an increase nor a decrease in the percentages of the County's population it currently contains. This reflects the future wastewater treatment capacities of the area's two Town Centers, Burney/ Johnson Park and Fall River Mills/ McArthur, and the constraints placed on land supply by agricultural and timber operations.

In the other eight planning areas, the geographic distribution of growth orients the somewhat smaller residential lots around Rural Community Centers and limits development outside of these centers to relatively larger lots. The intent here is to provide rural living opportunities which minimizes their inherent conflicts with the agricultural and timber operations present in these areas and recognize the constraints on water supply and wastewater treatment.

In addition to geographic distribution, the General Plan addresses the timing of growth, which has two aspects. One aspect is concerned with the monitoring of growth over time to ensure that the land supply inventory keeps pace with the rate of growth. The other equally important aspect of timing is concerned with the relationship of growth to public services. This means that growth must be consistent with the level of services provided to an area, and the level of services must be consistent with the long-range, as well as its short-range, development potential as provided in the General Plan. The overall thrust of development timing is to achieve a growth pattern which is provided with services in the most cost effective manner.

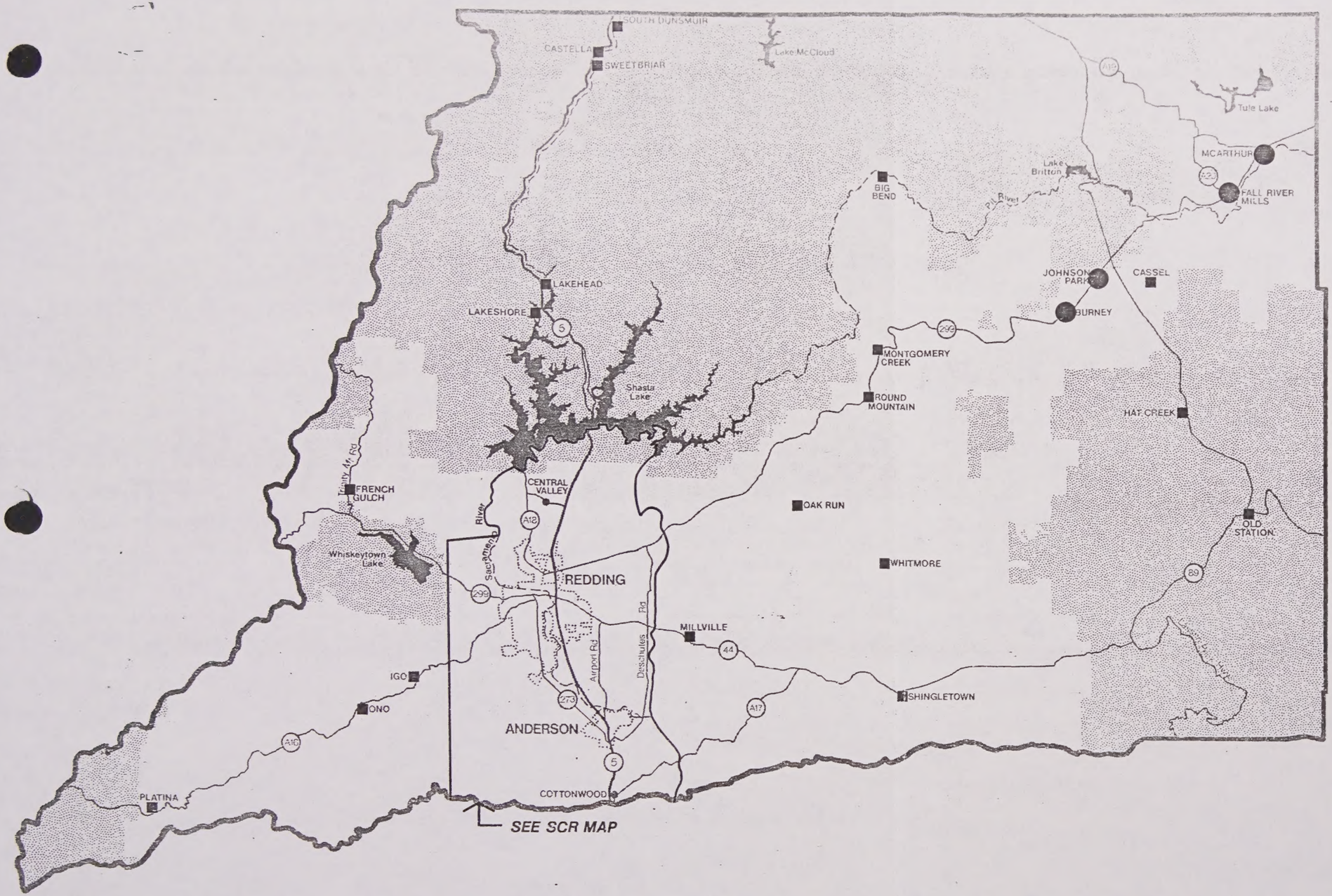
It is important to note that the concept of growth accommodation through distribution and timing to preserve quality of life is a major concept which permeates the entire Plan. But this concept can only be understood on a Countywide basis. Viewed from the perspective of a particular subarea of the County, growth accommodation may appear to be growth limiting. This local perception may be the result of one or more local conditions, e.g., uncertain groundwater supply, location of resource lands, or inaccessibility, which make the area unsuited for major growth. This local perception should not obscure the fact that overall the Plan does not limit, but rather accommodates growth.

A strategy of growth accommodation will also mean that in some areas of the County the permitted uses of land may not be in accord with the expectations of property owners. Conversely, in other areas, these expectations may be exceeded. This uneveness is an unfortunate but inevitable consequence of balancing private interests with the public health, safety, and welfare.

The Plan is a Decision-Making Tool Requiring Periodic Review

The General Plans of most local governments in California, including Shasta County, have in the past tended to be static documents prepared in response to State mandates and infrequently consulted once adopted by the County Board of Supervisors. These Plans were largely ignored because they provided no guidelines for day-to-day decisions. As community needs changed , necessitating changes in the zoning regulations, the typical process used was a zoning ordinance and general plan amendment initiated on an ad hoc basis and paid for by a landowner/developer. Since the Plan did not provide a clear policy framework for evaluating the proposed amendments, the amendment process tended to be lengthy and costly, to both the private and the public sectors.

FIGURE PRE-4
Community Organization



General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

This map shows generalized data. Detailed maps are on file with the Shasta County Planning Department.

SEDWAY/COOKE Urban and Environmental Planners and Designers

0 5 10 miles

This General Plan differs sharply from the plans described above. It is designed to function as an integral part of the day-to-day land use decision-making process by providing a clear-cut policy foundation for all land use regulations and implementation mechanisms, these include zoning and subdivision regulations, EIR procedures, and capital improvements programming.

The General Plan will encompass a well-defined time period, which will extend to the year 2000. One of the key elements of the Plan, is the provision of a land supply inventory to accommodate the population and economic growth projected for this period. However, this approximate 20 year horizon does not remain fixed. The Plan will be continuously monitored by the Planning Department. This monitoring process will document how well the population and economic growth projections are holding up, where and at what rate the land supply inventory is being consumed, and related matters. The results of this monitoring process will be reported to the Planning Commission and Board of Supervisors annually. Every five years, the Plan will be comprehensively evaluated and major amendments will be proposed as are appropriate. Some of these amendments will address additions to the land supply inventory in order to maintain a 20 year land supply. Other amendments may address significant changes in the Plan objectives.

Growth Accommodations Among a Variety of Living Environments

The General Plan provides for three levels or types of communities within Shasta County. They are:

- Urban Centers
- Town Centers
- Rural Community Centers

These communities are shown in Figures PRE-4 and 4A.

In addition, the Plan recognizes the rural homesite, which is located outside of a community.

Each type of community center and the category of rural homesite reflects a different level of public service availability and response to the surrounding natural environment, and in so doing provides a unique and different living environment. As the past growth of Shasta County has demonstrated, each type of living environment is desired by persons now living in Shasta County or who will live here in the future. The Plan provides for each type of living environment. The characteristics of these living environments are discussed below.

Urban Centers

This type of community provides the full range of urban services within the boundary of an incorporated city. There are two Urban Centers in Shasta County: Anderson and Redding.

The services available within an Urban Center include community water supply and wastewater treatment, full-time police and fire protection, schools, public recreation facilities, emergency services, medical facilities, and cultural activities. The Urban Center functions as a major employment and retail trade center, and it contains one or more major destination points in the transportation network.



South Central Region

General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

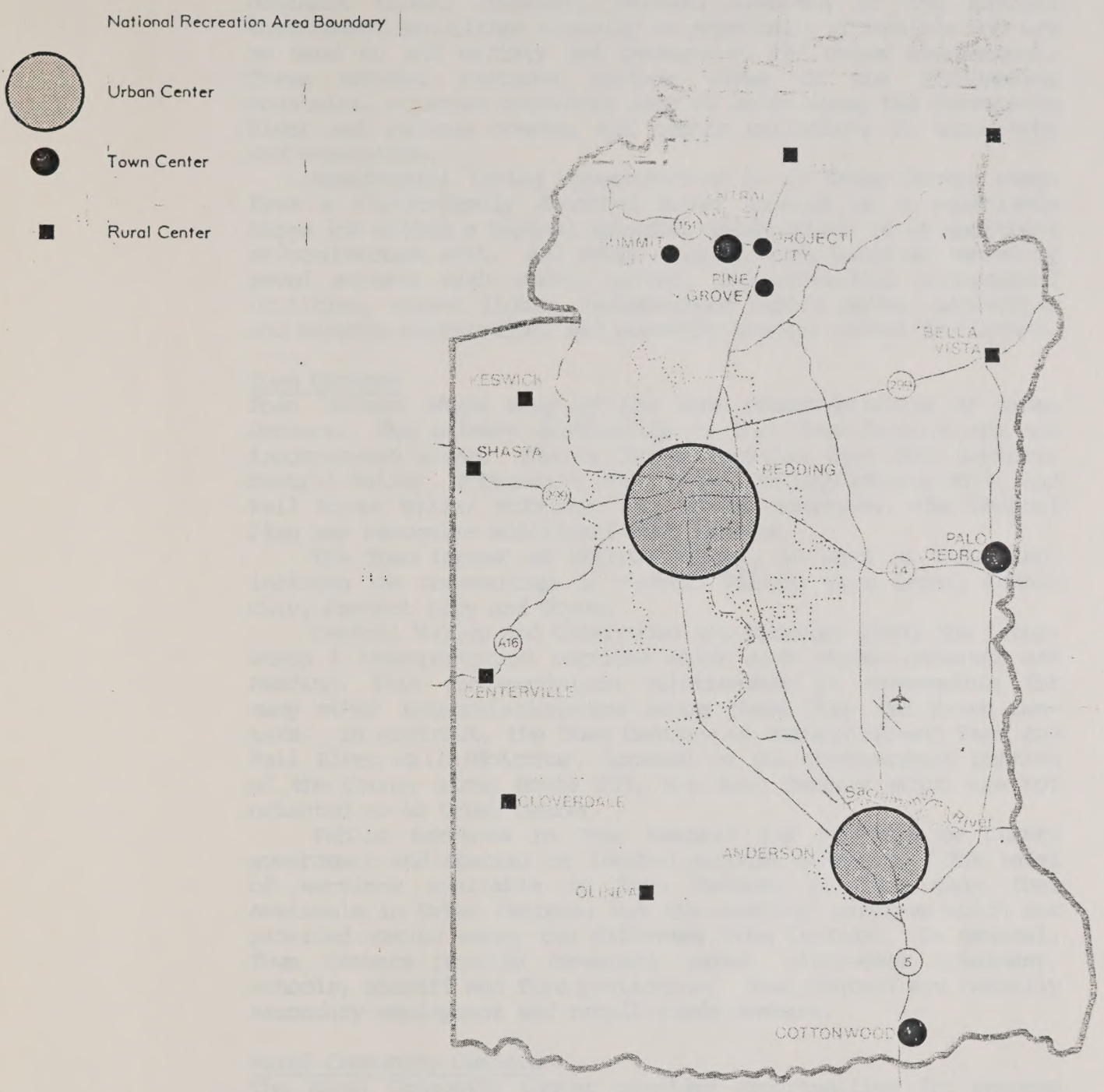


FIGURE PRE-4A
Community Organization

South Central Region

General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

SEDWAY/COOKE Urban and Environmental Planners and Designers

Within an Urban Center, the man-made environment is the dominant theme. However, certain elements of the natural environment are either visually or physically accessible and may be used to add variety and texture to the urban environment. These natural features include views of the surrounding mountains, riparian corridors such as exist along the Sacramento River and various creeks, and scenic variations in topography and vegetation.

Residential living opportunities in an Urban Center range from a single-family detached house located on a relatively large lot within a typical suburban neighborhood to an apartment or condominium unit. All urban neighborhoods would be served by paved streets with curbs, gutter, and sidewalks, underground utilities, street lights, neighborhood public parks, pedestrian and bicycle circulation, and possibly transit access facilities.

Town Centers

Town Centers share many of the same characteristics of Urban Centers. The primary distinction is that Town Centers are not incorporated areas. Shasta County contains five Town Centers: Central Valley, Cottonwood, Palo Cedro, Burney/Johnson Park, and Fall River Mills/ McArthur. In future revisions, the General Plan may recognize additional Town Centers.

The Town Center of Central Valley, as used in this Plan, includes the communities of Central Valley, Pine Grove, Summit City, Project City and Toyon.

Central Valley and Cottonwood are situated along the Interstate 5 transportation corridor which also serves Anderson and Redding. This transportation relationship is responsible for many other interrelationships among these Town and Urban Centers. In contrast, the Town Centers of Burney/Johnson Park and Fall River Mills/McArthur, located in the northeastern portion of the County along Route 299, are Town Centers which are not oriented to an Urban Center.

Public services in Town Centers are provided by County government and special or limited purpose districts. The level of services available in Town Centers is less than that available in Urban Centers, but the specific services which are provided varies among the different Town Centers. In general, Town Centers provide community water, wastewater treatment, schools, sheriff and fire protection. Town Centers are normally secondary employment and retail trade centers.

Rural Community Centers

The Rural Community Center provides opportunities for persons desiring to live in an environment characterized by the following features. Few if any urban services are available; the population density as a function of total number of people per total acres of land (not a function of lot size) is lower than in Urban and Town Centers; access to the natural environment is a major element of daily life. Rural Community Centers are characterized by a strong sense of identity, which in many instances has its origins in the early settlement of Shasta County. There are 25 Rural Community Centers in Shasta County. In future revisions, the General Plan may recognize additional centers.

Shasta County is divided into ten planning areas and, with the exception of the Northwestern Forest area, each contains at least one Rural Community Center, as follows:

Sacramento Canyon
- Lakeshore
- Lakehead
- Castella/Sweetbriar
- South Dunsmuir

Northwest Forest
None

Big Bend
- Round Mountain
- Montgomery Creek
- Big Bend

North East Shasta
- Cassel
- Hat Creek

Lassen
- Old Station (North and South)

Eastern Forest
- Viola
- Shingletown

Eastern Upland
- Millville
- Oak Run
- Whitmore

South Central Region
- Mountain Gate
- Jones Valley
- Bella Vista
- Happy Valley
- Centerville
- Shasta/Keswick

Western Upland
- Igo
- Ono
- Platina

French Gulch
- French Gulch

In Rural Community Centers, water is typically provided by on-site wells or surface diversions and wastewater treatment by individual septic tanks. Important exceptions to this general rule are Rural Community Centers located in the South Central Region, all or part of which are served by community water systems. The availability of this service permits development

at higher densities than will be possible in other Rural Community Centers because it eliminates dependence on uncertain groundwater supplies and the potential for contamination of groundwater by septic systems. This distinction between Rural Community Centers according to the availability of community water service plays a major role in the concept of Countywide distribution of growth.

Other services available within Rural Community Centers include schools, sheriff, and volunteer fire protection. Rural Centers typically provide commercial services to residents of the surrounding community and some centers also provide services to tourists. Commercial uses in Rural Community Centers are frequently mixed with residential and light industrial uses, in contrast to the physical segregation of different land uses which is typical of Town and Urban Centers. Given the size of the communities they serve, Rural Community Centers offer limited employment opportunities.

The natural, as opposed to the man-made environment, is the dominant theme in Rural Community Centers.

Physical access to the natural environment for living and recreational purposes is an important element of daily life in Rural Community Centers. The natural environment surrounding these centers also provides the resource base for agriculture, timber, and tourism, industries which are extremely important to the economy of Shasta County. This desire for personal access to resources which also provide the basis for industry results in land use conflicts. The greater the number of people located in a rural area, the greater the potential for conflicts. A major objective of the Rural Community Center is to minimize this potential for conflicts by providing opportunities for relatively small lot rural residential development within a designated area, while locating large lot, lower densities in areas outside the rural communities where the potential for conflict between residential and resource based land uses is greatest.

Residential development within Rural Community Centers is either conventional or manufactured single-family detached housing. As provided by policies contained in the Community Development Element, lot sizes in Rural Community Centers range from 2 acres and larger. The lot sizes are a function of dependence on either on-site water supply, or on-site wastewater treatment, or both, and the desire for lower population densities. In some Rural Community Centers, existing developed lots are much smaller in size. The concept of a Rural Community Center recognizes the existence of smaller developed lots, while also recognizing that future development will require new lots to be larger to comply with County wastewater treatment standards and community lifestyle objectives.

Physical design standards and are much less demanding than those applicable to Urban and Town Centers. However, these standards also respond to factors not present in Urban and Town Centers, including dependence on on-site water supply and wastewater treatment, and wildland fire protection.

Rural Homesite

In areas providing rural homesites public services are usually limited to schools, sheriff and volunteer fire protection and the commercial services provided by Rural Community Centers which are not always readily available. The influence of the surrounding natural environment is pervasive, and frequently the

presence of the man-made environment is limited to the residence, the electric power lines which serve it, and the road which provides access. In many cases, the rural homesite is bordered by agricultural and timber operations, raising the potential for conflict with them. Also, rural homesites are typically located in areas where groundwater supplies are limited soils constrain the use of septic tanks, and fire hazards are extreme.

The concept of the rural homesite in the General Plan responds to these above factors by restricting the density of rural residential development outside of Rural Community Centers to relatively large lots. Density is expressed in terms of dwelling units per unit of land area, that is, one dwelling unit per 5 acres and larger. It is important that this density regulation not be confused with lot size. A major element of the rural homesite concept is to permit the density averaging of dwelling units so that smaller lots can be provided while maintaining the desired overall density. Illustrations of variable lot sizes achieved by density averaging is shown in Figure PRE-5.

Housing types used with the rural homesite would be either conventional or manufactured single-family detached housing. Physical design standards would permit experimentation with alternative technologies in wastewater treatment and at a minimum must be consistent with public health and safety objectives.

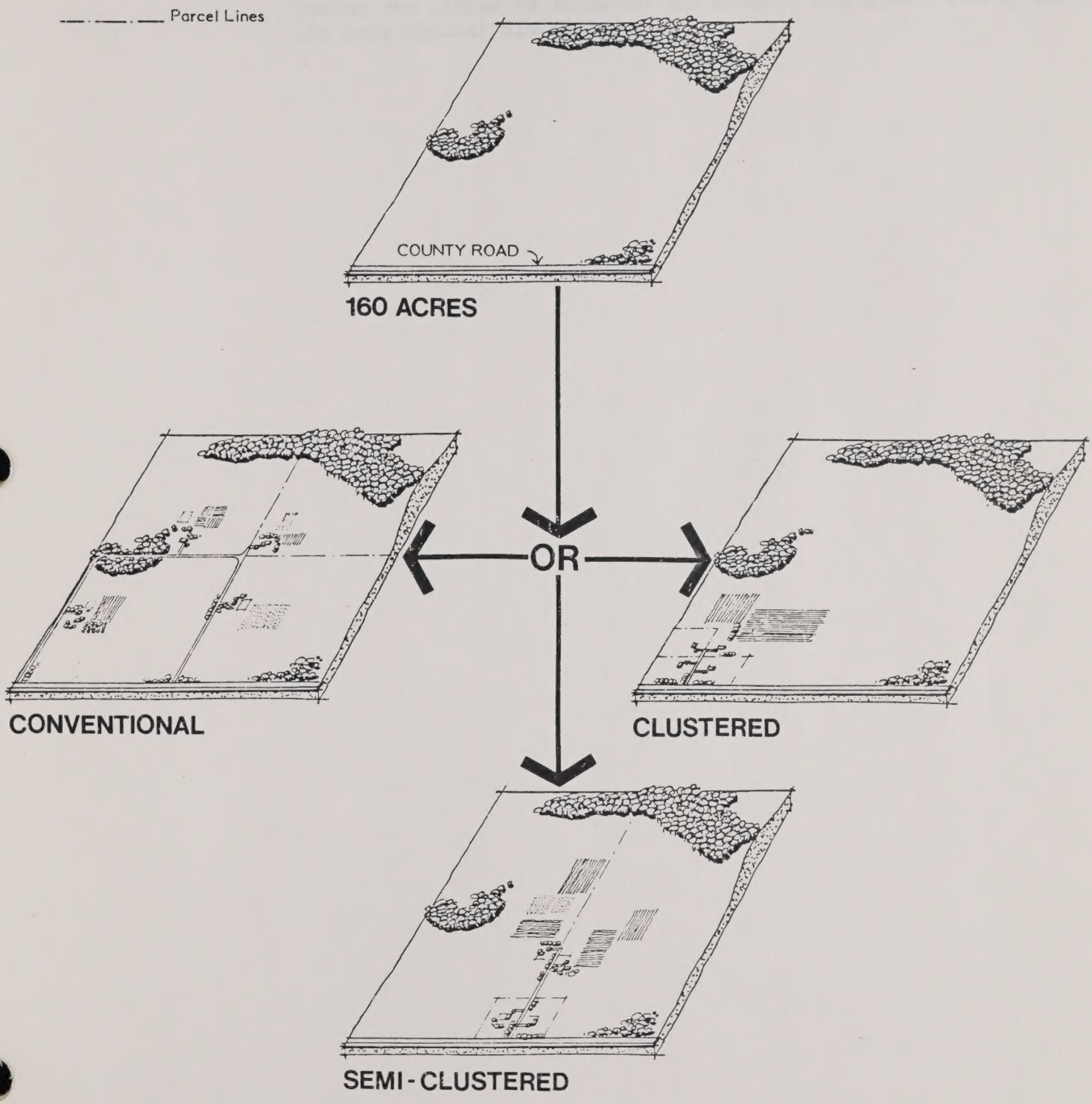
INTERJURISDICTIONAL APPROACH TO PLANNING ISSUES

Planning issues do not respect the invisible boundary lines of cities, counties, and special districts. The various factors of the natural and man-made environments of the County are closely interrelated. These factors, such as water supply, wastewater treatment, circulation, air quality, and community development, cause the planning issues they raise to transcend political subdivisions. Unilateral approaches to these issues may appear attractive in the short run, but over the long term they may prove undesirable. Several reasons may account for this.

Implicit in any local government land use decision are certain benefits and costs. These benefits and costs may be measured in monetary terms such as tax revenues gained or public service expenditures. In making an independent land use decision, a rational governmental entity, be it County, city, or special district, will seek to maximize its benefits and minimize its costs. Frequently, minimization of costs simply means shifting them to some other entity of government. A better approach would be one designed to foster cooperation so that all methods of cost reduction are explored and, where feasible, utilized.

Unilateral or independent approaches to planning issues may result in the unintended foreclosure of planning options which could be exercised by another government to the advantage of all. Cooperative planning can avoid this by allowing governments to inform each other of their intentions and jointly develop mutually agreeable plans.

FIGURE PRE-5
Examples of Variable Lot Sizes Through Density Averaging (DENSITY: 1 DU/40 ACRES)





Independent approaches to the provision of services to new development can result in the costly duplication and underutilization of services and the application of different standards for services to areas which may ultimately come under the jurisdiction of another government through annexation. In the latter situation, a change in jurisdiction may require the upgrading of services in existing, developed areas at much higher costs than if the ultimate level of services had been installed initially.

A major theme of the General Plan is the need for interjurisdictional coordination in resolving the planning issues facing the Cities of Anderson and Redding and Shasta County and its many special districts.

Implementation

IMPLEMENTING THE PLAN

Implementation of the Shasta County General Plan will require a major commitment of public and private resources. The most significant part of the implementation program will be the zoning ordinance revision. A comprehensive and thorough overhaul of the County's zoning ordinances is required, both to remedy existing deficiencies and to implement the Plan. This revision, including final action by the Board of Supervisors, should be accomplished as soon as possible after adoption of the Plan.

A zoning revision of the magnitude described above inevitably and understandably raises concerns among property owners regarding its impact on property values. The particular zoning of a parcel of land does help establish its value in the marketplace, although other factors also come into play. As a result of the rezonings prescribed, some properties in Shasta County may decline in market value, others may increase, and others may remain unaffected. In evaluating this situation, it is important to keep in mind certain legal principles governing the law of land use regulation.

It is a well-established principle of law that property owners have no legally protected or "vested" right to the maintenance of the existing zoning of property. It is also well-established that a diminution of property values as the result of a proper rezoning is not legally compensable by the cognizant governmental agency. Likewise, government cannot expect payment for enhancement of property values occasioned by rezonings. These principles are founded on the importance of a local government's ability to exercise its police power to advance the legitimate interests of the whole community. These principles are also founded on the fact that whatever value is lost or gained by a rezoning was initially gained or lost through a prior exercise of the police power.

Plan Maps and Their Interpretation

In addition to text, the General Plan contains maps, of which there are two types - official and illustrative. Official maps show the geographic application of General Plan policies, while illustrative maps are merely visual aids for the reader. Only official maps shall be consulted to determine how Plan policies apply to geographic areas within the County.

To be of any value, official maps must be at a scale which facilitates their use and understanding. For this reason, Shasta County has been divided into ten planning areas, as shown in Figure PRE-6.

A limited number of official maps using much smaller scales are contained within the Plan text. The official status of these maps is indicated when referenced by a policy. All other maps in the text are illustrative only and shall not be used for policy interpretation purposes.

The purpose of official General Plan maps is to show the geographic application of Plan policies. Use of official Plan maps in this capacity must respect the limitations of General Plan maps with regard to precision and level of detail. Past practice in Shasta County was to directly translate General Plan land use map designations into land use regulations applicable to a specific parcel of property. Before a General Plan map is given direct regulatory effect, it must be translated into a map, usually a zoning ordinance map, with precise, legally definable boundaries. The following guidelines are provided for this purpose.

The principal rule to be followed is one of common sense. Taking a comprehensive view of all relevant Plan policies, the result must further the intent of these policies in a practical, workable, and sound manner. Unusual, awkward, and strained solutions are not intended by the plan and should be avoided.

The starting point in translating a General Plan map into a legally definable boundary is the Plan itself. All pertinent policies, standards, and criteria should be thoroughly reviewed and understood. At times it may be necessary to review background information used to prepare Plan maps. This may provide useful insights into the policy rationale for the Plan boundary. Once reviewed, the information should be applied to the Plan map to determine how this map expresses the relevant policies. Inspection of the Plan map should determine when Plan designations appear to follow physical boundaries, either natural or man-made, and non-physical, man- made boundaries, e.g. section lines, city limits. No attempt should be made to measure distances on the Plan map.

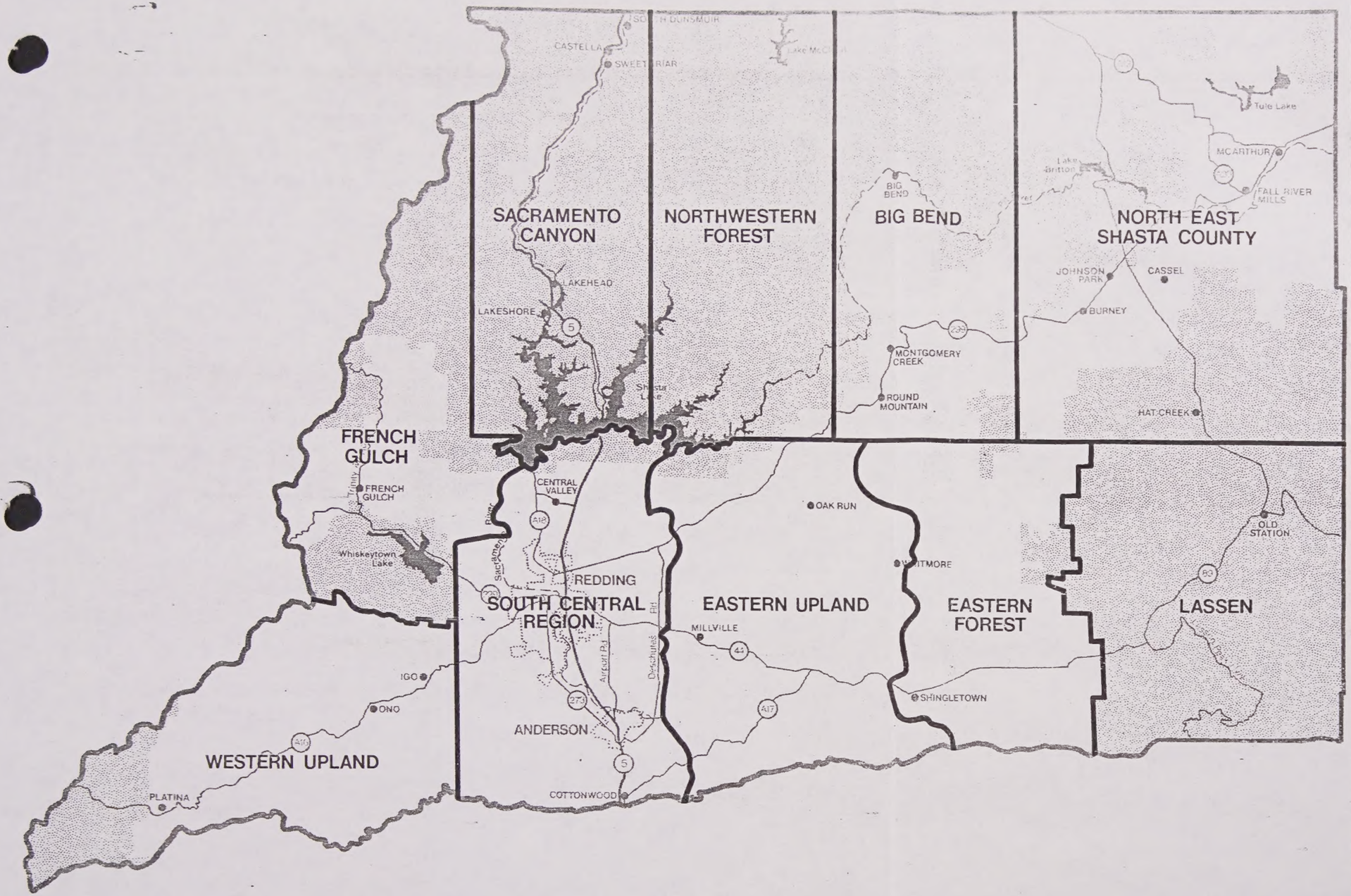
Account should also be taken of existing physical conditions in the geographic area in question. Physical and non-physical boundaries noted on plan maps should be related to these boundaries as they actually exist. Field surveys may be necessary for this purpose. Once a definable and legally describable boundary has been preliminarily established, it should be compared with any other non- physical boundaries in the vicinity, such as property ownership lines, political entity boundaries, section lines, etc. Applying the common sense rule, impractical or unusual preliminary boundaries should be revised provided this is consistent with Plan policies.

Use of the Plan by Officials and Citizens

The General Plan is designed to be used by County officials on a daily basis in making decisions with land use implications. It is not designed for infrequent consultation. Failure to use the Plan will quickly cause it to become out of date and irrelevant.

County residents and property owners are expected to be major users of the Plan. The Plan must be used comprehensively and Plan objectives and policies must be viewed in the context provided by all other relevant objectives and policies. To assist the reader in taking this comprehensive approach, the Plan elements are cross-referenced and each element group contains an introduction explaining the relationship of its elements to those of the other groups.

FIGURE PRE-6
Planning Area Boundaries



General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

SEDWAY/COOKE. Urban and Environmental Planners and Designers

This map shows generalized data. Detailed maps are on file with the Shasta County Planning Department.

0 5 10 miles

A major function of the Plan is to inform property owners of the policies applicable to their lands and the long-term implications of these policies. To this end, public access to and understanding of the Plan is encouraged and the Planning Department will be available to the public to answer questions concerning the Plan.

The Shasta County General Plan is designed to be used by other government agencies to provide a framework for inter-jurisdictional coordination of land use planning efforts.

OBJECTIVES (Implementation)

The function of these objectives is to provide guidelines for the implementation of the General Plan and the operation of the planning process.

I-1 Recognition of planning as a comprehensive process that is derived from public policies clearly stated in the General Plan and includes the application of these policies to lands within the County through zoning, subdivision, and other regulations.

I-2 To develop a General Plan which is both internally consistent among all its elements and which provides the policy basis for the zoning, subdivision, and other implementing ordinances.

I-3 To develop public trust and confidence that the objectives, polices, and standards, shall be faithfully adhered to and equitably applied to all land use matters.

I-4 To provide public assurance that the General Plan shall be applied in a manner that responds to local conditions and local concerns through the interpretation of its policies, but only within well-defined and understood limits intended to preserve the overall integrity of the plan.

I-5 Development of a planning process that resists short-term pressures exerted by narrow interests to modify the General Plan, but is capable of thoughtfully responding to significantly changed conditions or shifts in community values.

I-6 Administration of the planning process which is characterized by:

- The efficient and expeditious handling of planning matters through the coordination of the various agencies of the County and other government agencies.

- Timely and decisive action on all planning matters.

I-7 To promote a planning process which is accessible to all citizens.

I-8 To fashion a planning process which recognizes the continuing need for citizen review of the objectives, policies, and standards contained in the General Plan.

I-9 To convert the General Plan land use boundaries to precise zoning boundaries through the use of natural and man-made physical boundaries such as creeks, ridges, roads, etc., and non-physical boundaries such as property lines, section lines, etc.

Part Two
COUNTYWIDE ELEMENTS



INTRODUCTION

The following portion of this document addresses planning issues of general importance throughout Shasta County. Each Countywide Element addresses a particular set of related planning issues raised by a common subject area, such as agricultural lands, water, and housing.

In order to provide a uniform format, each element contains the following sections:

- Introduction - Describes the subject area covered by the element and its legal authority.

- Findings - Identifies the planning issues addressed by the element, assesses their implications, and provides the rationale or basis for the objectives and policies contained in the element.

- Objectives - Presents community values and aspirations[1] regarding this element stated in the form of objectives.

- Policies - Establishes how public regulatory powers and community resources will be used to achieve the objectives of the element.

This portion of the document contains a total of 25 elements. To assist in understanding and using them, they have been divided into three categories:

- Public Safety
- Resources
- Community Development.

This categorization must not obscure the necessity to view each element within the total context of the Plan.

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[1]Based on the questionnaire submitted to the Countywide Planning Advisory Council and subsequent dicussions on the questionnaire results.

Public Safety Group



The Public Safety Group encompasses General Plan elements concerned with aspects of Shasta County's natural and man-made environment which pose threats to human life or property. The individual elements contained in the Public Safety Group are listed below:

- Seismic and Geologic Hazards
- Flood Protection
- Dam Inundation
- Fire Safety and Sheriff Protection
- Noise
- Hazardous Materials
- Air Quality
- Water Quality.

These elements are grouped together because collectively they define basic constraints on land use that will affect community development patterns. They are presented first because an understanding of their limitations is essential to formulating a development pattern which adequately provides for human safety.

It is also important to understand the interrelationships of the three element groups. Elements contained in the Public Safety Group place limits on the use of the County's physical resources in order to reduce the risks of loss or damage to life and property to acceptable levels. Elements contained in the Resources Group describe the opportunities available due to the County's resource base, and then define the limits within which these resources may be used on a long-term, sustainable basis. Elements in the Community Development Group in turn respond to risks posed by natural and man- made hazards and to the opportunities presented by the resource base.

Responding to these risks and opportunities in a responsible manner will ensure that both present and future generations of County residents will be able to enjoy the quality of life which Shasta County now offers.

SEISMIC AND GEOLOGIC HAZARDS

INTRODUCTION

Section 65302(g) of the California Government Code requires that general plans include an element containing identification and appraisal of seismic and geologic hazards. Seismic hazards addressed by this element include surface faulting, ground shaking, and ground failure. Non-seismic hazards addressed include volcanoes, erosion, and expansive soils. This element is based on a technical report included in the background reports to the General Plan. Its major findings and recommendations are summarized below.

FINDINGS

Seismic Hazards

Although not as active as some areas of the state, Shasta County, is a seismically active region. The seismicity of a region is described as the distribution, recurrence, and intensity of earthquakes over a period of time. Earthquake activity has not been a serious hazard in Shasta County's history, nor is it probable that it will become a serious hazard in the future.

Surface Faulting

During an earthquake, ground rupture with horizontal and/or vertical displacement may occur. Usually, the width of surface faulting is narrow in rock and much wider in saturated soils. Ground rupture also tends to occur along lines of previous faulting. With detailed investigation, surface faulting usually can be recognized and avoided. However, not all fault traces have been mapped, and some active faults have no surface expression. Where a known active fault or potentially active fault is approximately located, a geological investigation should be conducted prior to development to determine the precise location of fault traces.

The Fault Map of California (1975, Jennings, C.W. , et al) places Quaternary faults in the eastern and southern portion of Shasta County. Quaternary faults are those with the latest movement, within the last 2 to 3 million years. The State of California (California Division of Mines and Geology) considers Quaternary faults to be potentially active. In the western portion of the County are older, inactive faults from which future movement is considerably unlikely.

In 1972 the California Legislature enacted the Alquist-Priolo Special Studies Zones Act, which requires the State Geologist to delineate Special Studies Zones around all known traces of potentially and recently active faults in California. The Act requires withholding of construction permit approval until geologic investigation has determined that the building site is not threatened by surface fault displacement. The Special Studies Zones are usually one-quarter mile or less in width (Public Resources Code Section 2622). The California Division of Mines and Geology (CDMG) presently does not place any fault in Shasta County within an Alquist-Priolo Special Studies Zone. It is possible that upon further investigation and evaluation, the CDMG may judge some faults potentially active and may place them in a Special Studies Zone.

Until then it would be prudent for development proposals for critical or high density structures within 1/2 mile of Quaternary faults to include a geologic study of potential fault rupture. These structures may include hospitals, schools, power plants, dams, administrative/office buildings, or high density apartment buildings. Such a study should be performed by a registered geologist according to the general guidelines of the California Division of Mines and Geology. As more detailed geologic investigations are completed, the data should be reviewed and incorporated into the General Plan.

Ground Shaking and Failure

Ground shaking is the most hazardous effect of earthquakes because it is the most widespread and accompanys all earthquakes. The largest losses of life and property during an earthquake are due to violent ground shaking and resulting ground failures. Ground shaking can be described as high, moderate, or low intensity. Higher magnitude earthquakes generally produce higher shaking intensities over wider areas which may result in greater damage. This is reflected in the Modified Mercalli intensity ratings.

Shasta County has a low level of historic seismic activity. In the past 120 years, there has been no significant property damage or loss of life due to earthquakes occurring within or near the County. Maximum recorded intensities have reached Modified Mercalli VII, with possibly one instance of Modified Mercalli VIII. Most of the stronger intensity seismic activity in Shasta County has occurred in the eastern half of the County around Lassen Peak. The maximum intensity event expected to occur in eastern Shasta County is Modified Mercalli VIII. In the less seismically active western half of Shasta County, the maximum intensity is expected to be Modified Mercalli VII.

Various processes are grouped within the general phenomenon called ground failure. These include seismically induced landslides, liquefaction, lateral spreading and slumping, settlement, and lurch cracking. All of these involve a displacement of the ground surface due to loss of strength or failure of the under lying materials during earthquake shaking.

Landslides occur throughout Shasta County, although they have not been considered a major problem. Landslides are more prevalent in the eastern and northern portions of the County and are commonly related to the sedimentary and volcanic rocks in these vicinities. In the Whitmore Quadrangle mapped by G.A. MacDonald and P.A. Lydon, 1972, slumping and landsliding were widespread and attributed to poorly consolidated sedimentary rocks overlain by massive volcanic rocks. This type of instability has occurred in the Montgomery Creek Formation, in mudflow deposits of the Tuscan Formation, and in the sedimentary rocks of the Chico and Red Bluff Formations. Landslides in the western portion of the County are not as widespread, but occur in areas of sedimentary and volcanic rocks. Seismically induced landsliding is not considered a significant hazard in Shasta County.

Liquefaction is the temporary transformation of a loose, saturated, granular soil from a solid into a liquefied state, usually as a result of earth shaking. Liquefied soil behaves like a fluid. This phenomenon is most likely to occur in alluvial (geologically recent, unconsolidated sediments) and stream channel deposits, especially when the ground water table is high. Areas of potential liquefaction are located in the north central valley area referred to in this report as the South Central Region (SCR).

Damage in Shasta County resulting from earthquakes would most likely be from ground shaking and related ground failure. The effects of ground shaking and ground failure are best mitigated by adequate geotechnical investigations of specific sites, and by adequate design for the maximum credible earthquake for Shasta County.

Shasta County has adopted the Uniform Building Code, which establishes building requirements for all new structures based on predicted earthquake intensities. The risk of loss of life and property damage due to seismic activity is minimal if the Uniform Building Code is enforced.

Non-Seismic Hazards

Volcanoes

Shasta County is at the southern end of the Cascade Range, an active volcanic chain that extends northward into British Columbia. As the recent history of Mt. St. Helens indicates, the Cascades are still young and active. The most recent volcanic activity in Shasta County was in 1914-1917, when eruptions of Lassen Peak produced lava flows on the flank of the crater, numerous ash falls, and a large mudflow. The mudflow, result from melting snow and ash, moved down Lost Creek and Hat Creek. Several days after the mudflow, a nuee ardente, or "hot cloud," which is a mass of incandescent ash and gas, flowed down the same creeks and covered a wider area. The only indications remaining of previous volcanic activity are hot springs and fumaroles (gas vents) and occasional small earthquake swarms below the mountain.

Hot springs and fumaroles are present on Mt. Shasta, though there is no evidence of recent historic volcanic activity. As with Lassen Peak, the danger from volcanic activity on Mt. Shasta may not necessarily be from an eruption but from mudflows. Historic mudflow maps indicate that some mudflows have travelled more than 18 miles down the flanks of Shasta. While the potential is there, it is doubtful that even a large mudflow from Mt. Shasta would endanger Shasta County.

Most of the eastern half of Shasta County is downwind from relatively active and explosive volcanoes and about 75 to 80 percent of ash from these volcanoes would be expected to fall within this areas.

About 300 years ago within Lassen National Park, a rockfall avalanche occurred in Chaos Crags, an area of dacite lava domes. A recent study by the U.S. Geological Survey found that the potential for rockfall avalanches still exists, and they could happen with little or no warning.

The U.S. Geological Survey and the State of California monitor Lassen Peak and Mt. Shasta using seismometers and tiltmeters. With this system established, there would be sufficient warning of renewed volcanic activity to evacuate the immediate vicinity of the mountain.

Erosion

Erosion generally involves the removal of earth materials from one area with deposition in another and is a normal and inevitable geologic process. Erosion can be concentrated, as when land surfaces are gullied and stream banks are undercut, or it can be spread widely by sheetwash and slope denudation. Deposition can clog drainage structures, lakes and reservoirs, and floodplains. Activities by man, such as grading, frequently accelerate erosion and deposition.

Readers interested in more detailed erosion activity and control should review the Shasta County Erosion Control Study (CH2M Hill, 1980).

The Shasta County Erosion Control Study presents a set of guide lines for the preparation of an erosion and sedimentation control plan for a particular project. Also included are detailed appendices describing the use of these guidelines and specific control methods.

The next step is the preparation of a unified approach to erosion and sediment control using the implementation mechanisms described in the study. This effort would include the adoption of standards governing when development projects shall be required to prepare erosion and sediment control plans.

Expansive Soils

Some soils have a potential to swell when they absorb water and shrink when they dry out. These expansive soils generally contain clays that expand when moisture is absorbed into the crystal structure. Most of Shasta County is characterized by moderately expansive soils with areas of low expansiveness in the South Central Region and southeastern corner of the County. Small scattered areas of highly expansive soils occur in the mountains of the Western Upland, French Gulch, and North East Shasta County Planning Areas. This hazard is identifiable through standard soil tests. Its effects on structures can be mitigated through the requirement of proper engineering design and standard corrective measures.

OBJECTIVES

SG-1 Protection of all development from seismic hazards by developing standards for the location of development relative to these hazards; and protection of essential or critical structures, such as schools, public meeting facilities, emergency services, high-rise and high-density structures, by developing standards appropriate for such protection.

SG-2 Protection of development on unstable slopes by developing standards for the location of development relative to these hazards.

SG-3 Protection of development from other geologic hazards, such as volcanoes, erosion, and expansive soils.

POLICIES

SG-a Development proposals for critical or high density structures, as defined in the Uniform Building Code, located within ½ mile of known Quaternary faults shall include a geologic study of potential fault rupture. Geologic studies which are undertaken shall be performed by a registered geologist according to general guidelines of the California Division of Mines and Geology. This policy shall be revised as appropriate, upon the designation of Special Studies Zones by the California Division of Mines and Geology.

SG-b In order to minimize development that would be endangered by landslides, geological investigations by a registered geologist or a geological engineer will be required on all subdivisions and/or developments where the preliminary staff report indicates the possibility of landslides on or adjacent to the development. A landslide map shall be developed and maintained as these reports are accumulated for reference by the development sponsors.

SG-c Shasta County shall coordinate with state and federal agencies monitoring volcanic activity and shall periodically review and update the Shasta County Emergency Plan with respect to volcanic hazards.

SG-d Shasta County shall maintain standards for erosion and sediment control plans for development.

SG-e When soil tests reveal the presence of expansive soils, engineering design measures designed to eliminate or mitigate their impacts shall be employed.

FLOOD PROTECTION

INTRODUCTION

The purpose of the Flood Protection Element is to reduce damage to public health and property resulting from flooding. Flood protection is required as part of a general plan by Government Code Section 65302(a).

FINDINGS

Various areas in Shasta County are subject to flooding by rivers and creeks. Many of these same areas are also desirable locations for development as they are often characterized by level topography, good access to transportation systems, and soils well suited for agricultural operations and septic tank usage.

Development in flood-prone areas of the County has resulted in damage to property and loss of life when flooding occurred. Between 1900 and 1970, there have been thirteen severe floods in the Sacramento River Basin.

The private and public costs of flooding are substantial. In 1970, flooding resulted in approximately $12 million in damages, and close to $8 million in 1974. Problems caused by flooding include loss of life, displacement or complete destruction of buildings, water damage to buildings and furnishings, siltation, temporary loss of utilities, road damage, transportation slowdowns, loss of goods and materials, damage to bridges by objects floating down stream, and the threat of waterborn disease.

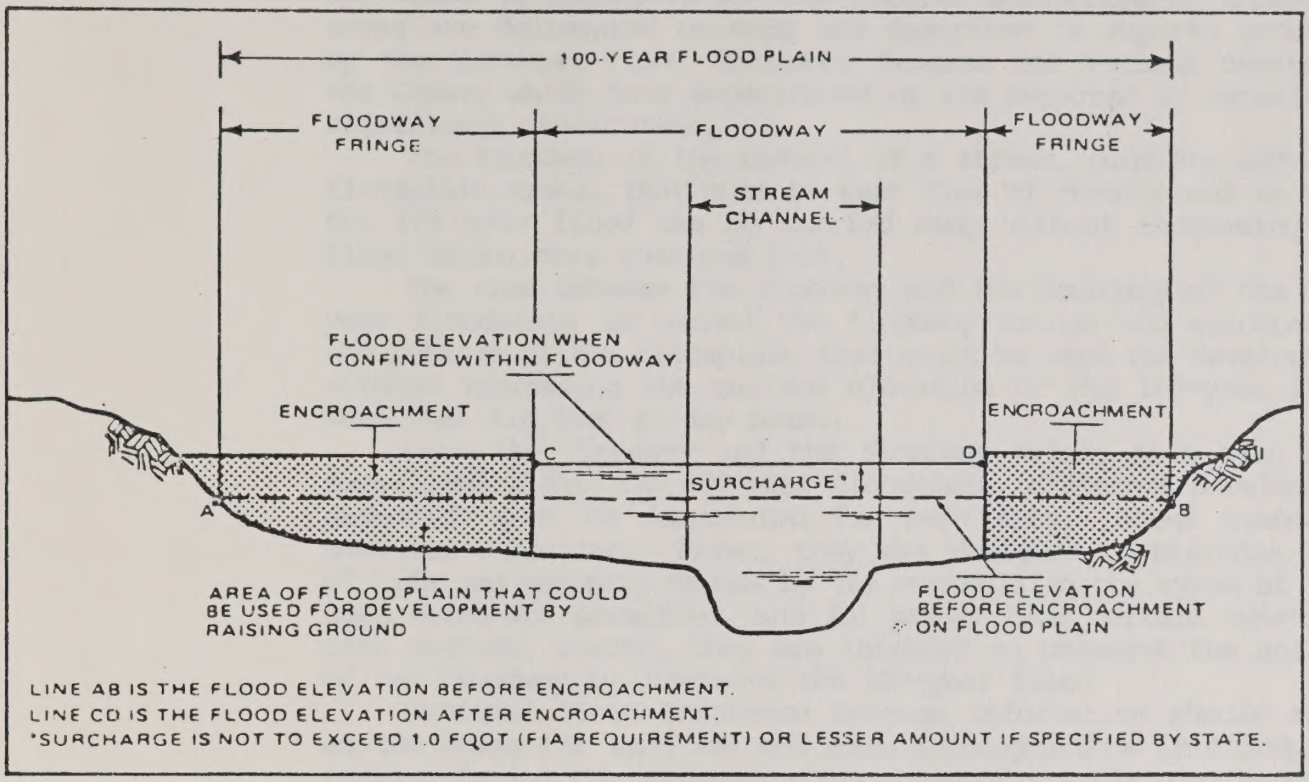
Despite the potential hazards involved with development in floodplains, they remain desirable areas for a variety of land uses. In addition to residential and agricultural uses, flood-prone areas frequently offer good recreational opportunities and often provide habitat for many forms of wildlife, including rare or endangered animal and plant species. The Sacramento River floodplain is an excellent example of such an area in Shasta County.

Damages resulting from the development of flood-prone areas can be minimized through floodplain management. This management concept encompasses a comprehensive program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control projects, and floodplain management regulations.

The National Flood Insurance Act of 1968 offers an important incentive to communities for implementing a floodplain management program. In communities which have adopted floodplain management regulations, owners of property located in flood prone areas may obtain federally subsidized flood insurance. Shasta County has adopted such floodplain management regulations.

The boundary of the 100-year floodplain is the basic planning criterion used to distinguish areas where flood hazards justify the establishment of floodplain management regulations. Outside this boundary, the degree of flooding risk is not considered sufficient to justify the imposition of flood plain management regulations, while inside the 100-year floodplain some level of regulation is required to protect public health, safety, and welfare.

FIGURE FL-1
Floodplain Schematic



SOURCE: U.S. Department of Housing and Urban Development

For purposes of the National Flood Insurance Program, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The relationship between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure FL-1. The precise boundaries of those two areas are delineated on maps and described in reports produced by the National Flood Insurance Program for various creeks in the County which have experienced or are expected to experience significant development.

The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of development so that the 100 year flood can be carried away without increasing the flood height more than one foot.

The area between the floodway and the boundary of the 100-year floodplain is termed the floodway fringe and encompasses the portion of the floodplain that could be used for development without increasing the surface elevation of the 100-year flood more than 1.0 foot at any point.

Once the floodway and the floodway fringe have been distinguished within the 100-year floodplain, different development standards must be formulated for each area. These standards have two functions. First, they are designed to minimize loss of life and property damage by (a) controlling the types of land uses which are permitted, and (b) prescribing certain construction methods. Second, they are intended to preserve the ability of the floodway to discharge the 100-year flood.

National Flood Insurance Program information should serve as the basis for land use and zoning designations in floodplain regions during the implementation phase of the planning process.

Heavy winter rains in the Sacramento Valley and subsequent flooding of the Sacramento River frequently results in severe erosion of the river's banks and loss of valuable agricultural soil and riparian vegetation as well as life and property.

In response to this recurring situation, in 1970 Congress authorized funding for a federal flood control project along tributaries of Cottonwood Creek. The project involves construction of two earth filled dams by the U.S. Army Corps of Engineers. These dams would create Dutch Gulch Lake in Shasta County, approximately 11 miles west of the town of Cottonwood; and Tehama Lake in Tehama County. The project is estimated to save $3 million per year in flood damages.

OBJECTIVES	FL-1	Protection of public health and safety, both on-site and downstream, from flooding through floodplain management which regulates the types of land uses which may locate in the floodplain, prescribes construction designs for floodplain development, and requires mitigation measures for development which would impact the floodplain by increasing runoff quantities.
POLICIES	FL-a	New development in floodplains shall be regulated through zoning regulations addressing land use type, density, and siting of structures.

FL-b County flood control measures should advance, in so far as possible, the goals of providing for domestic and agricultural water uses, recreation, resource conservation (including streamside vegetation and habitat) and the preservation of the scenic values of the County's water resources.

FL-c Whenever possible, flood control measures should consist of channel diversions or limited floodplain designs which avoid alteration of creeks and their immediate environs.

FL-d The County shall maintain emergency preparedness plans to protect the public from flooding hazards.

FL-e New critical or high occupancy structures (e.g., schools, hospitals) shall not be located in the 100 year floodplain unless those structures and supporting utilities are designed to prevent damage and service interruption during the 100 year flood.

FL-f Known flood hazard information shall be reported as part of every General Plan amendment, zone change, use permit, variance, building site approval, or other land development applications subject to environmental assessment.

FL-g Flood Hazard Maps shall be maintained by the County to aid in the project review process.

FL-h The impacts of new development on the floodplain or other downstream areas due to increased runoff from that development shall be mitigated.

DAM FAILURE INUNDATION

INTRODUCTION

The discussion of dam failure inundation falls under the authority of the mandated Safety Element. The Dam Failure Inundation Element identifies hazards that require consideration in planning the type, location, and density of development. Policies and programs proposed in this element should be closely coordinated with the County Office of Emergency Services.

FINDINGS

Dam failure inundation is defined as the flooding which occurs as the result of structural failure of a dam. Structural failure may be caused by seismic activity. Seismic activity may also cause inundation by the action of a seismically induced wave which overtops the dam without also causing dam failure. This action is referred to as a seiche. Water retained in a dam could also be displaced by the action of a volcanically induced mudflow. Landslides flowing into a reservoir are also a source of potential dam failure or overtopping.

Over 3000 reservoirs are presently located in Shasta County. Of these, 36 are dams whose design, operation, and maintenance come under the authority of the California Department of Water Resources because of their size. The State Office of Emergency Services has further identified those jurisdictional dams whose failure may cause injury or loss of life. These dams are listed in Table DI-1.

The California Office of Emergency Services has prepared maps showing the areas which would be inundated if the dams listed in Table DI-1 fail. Dam failure inundation information from Shasta and Whiskeytown Dams has been transferred to a map of the SCR planning area is on file with the Shasta County Planning Department.

Dam failure inundation hazards present major health and safety implications in the SCR Planning Area, particularly in the vicinity of the Shasta Lake and Whiskeytown Reservoir dams. Failure of Shasta Dam would result in the inundation of most of Redding within less than an hour of failure. Within two hours, all of Anderson and much of the Sacramento River Valley downstream of Redding would be inundated.

Given its smaller size and location relative to existing development, failure of Whiskeytown dam would be less disastrous. Redding would not be affected, but over half of Anderson would be inundated within two hours of failure. A smaller portion of the Sacramento River Valley downstream of Clear Creek would also be inundated. The proposed increase in elevation of Shasta Dam would require revision of its inundation hazard maps. Construction of the proposed Dutch Gulch Reservoir on Cottonwood Creek will also create a new inundation hazard area.

Considering existing development patterns and trends, particularly in the South Central Region and the unlikelihood of a dam failure, it would be infeasible to preclude future development from locating in dam inundation areas. It is possible, however, to discourage critical structures (hospitals, fire, and police stations) and high occupancy structures (schools, theatres, and public meeting places) from locating in these areas. These policies are designed to reduce the risk of injury or loss of life in the event of inundation and should be addressed by County evacuation preparation plans as well as General Plan policies.

TABLE DI-1

SHASTA COUNTY DAMS WHOSE FAILURE MAY RESULT IN INJURY OR LOSS OF LIFE

Name	Owner/Operator	Planning Area(s) Affected
Box Canyon	Siskiyou County	Sacramento Canyon
Boyd #1 and #2	Boyd Trucking Company	South Central Region
Haynes Reservoir	_____	Northeast Shasta County
Iron Canyon	PG&E	Big Bend
Keswick	Department of Interior	South Central Region
McCumber	PG&E	Eastern Forest
McCloud	PG&E	Northwestern Forest
Nash	Dr. Lewis Nash	South Central Region
North Battle Creek	PG&E	Eastern Upland, Eastern Forest
Pit #1, 3, 4, 5, 6, 7 Forebay	PG&E	Big Bend, Northeast Shasta County
Pit #5, Open Conduit Dam	PG&E	Big Bend
Whiskeytown	Department of Interior	South Central Region
Shasta	Department of Interior	South Central Region

Source: State of California Office of Emergency Services

OBJECTIVES

DI-1 Reduction of the potential for the loss of life from dam failure inundation by developing emergency preparedness plans.

POLICIES

DI-a Dam Failure Inundation Maps shall be maintained by the County to aid in the project review process.

DI-b When development is proposed in areas adjacent to or downstream from an existing dam, the County shall determine if preparation of a dam failure inundation map is warranted.

DI-c The Shasta County Emergency Plan shall provide for early warning and emergency evacuation routes in the event of dam failure.

FIRE SAFETY AND SHERIFF PROTECTION

INTRODUCTION

This element discusses conditions and issues relevant to the protection of public health and safety from fire damage. It also addresses sheriff protection in Shasta County. These topics are required under the state mandated safety element which reads:

"A safety element for the protection of the community from fires . . . wildland and urban fires."(Government Code Section 65302(g)).

FINDINGS

Wildland and nonwildland fires are the two types of fire hazards.

Wildland Fire

Wildland fires burn natural or wild vegetation located on undeveloped lands. Human activities such as smoking, debris burning, and equipment operation are the major causes (90%) of wildland fires. Lightning causes the remaining 10% of the wildland fires in Shasta County. Whatever the cause, wildland fires present a major safety hazard to rural development located in forest, brush, and grass covered areas. Between 1977 and 1979, there was an average of 435 wildland fires per year in Shasta County. The majority of these wildland fires occurred in the upland areas of Shasta County, where fire hazards are extreme due to an abundance of highly flammable vegetation and long, dry summers.

The California Department of Forestry has devised a fire hazard severity classification system for California's wildlands which assesses the fire potential for wildlands based on three factors: fuel load, climate, and topography. Each of these factors is discussed below.

Fuel Load

Vegetation is the major source of fire fuel. The quantity of available vegetative fuel determines the intensity of a wildland fire. Types of fuel loads are classified into three categories:

LIGHT (GRASS). Includes areas dominated by grasses, annual herbs, and barren land. This is the lightest fuel load; it burns easily, but is the easiest to control.

MEDIUM (SHRUB). Includes areas in which brush, shrubs, and other perennial vegetation less than six feet in height are dominant.

HEAVY (WOODS - BRUSHWOOD). Includes areas in which vegetation six feet or more in height is dominant. This is the hardest vegetative type to start burning but, due to the heavy fuel load, it is the hardest to control once burning.

Climate

Critical to fire control is the weather. The combination of wind, low relative humidity, and seasonal lack of precipitation provides the basis for critical fire weather. The long, dry, hot summers that are representative of California reduce the moisture in vegetation, thereby increasing its susceptability to fire. Once burning, low humidity and winds cause a fire to spread rapidly. All wildlands in California experience critical fire weather to some degree, which is the primary reason for the state's notorious fire problem. Critical fire weather is broken into three classes depending on frequency of critical fire weather. Class I areas are least susceptible, Class II more susceptible, and Class III are most susceptible to critical fire weather.

Topography

The influence of topography on fire hazard increases with slope, as steep slopes cause fires to burn faster and increase travel time for emergency equipment. Thus, as slope increases, the ability to control fire decreases.

Hazard Classifications

These factors are combined in matrix form to derive three wildfire hazard classifications: moderate, high and extreme, as shown in Figure FS-1. Wildland fire hazard classifications have been mapped for each of the ten Shasta County planning areas.

Wildland fires in developed areas are difficult to control even when adequate equipment and personnel are available, as residential intrusion requires the deployment of firefighting techniques and equipment normally not used in fighting wildland fires. Structural fires must be extinguished with large amounts of water, whereas wildland fires are controlled by containing the blaze and allowing the flames to die out. In order to protect vulnerable buildings from wildland fires, firefighting resources are usually spent protecting the structures rather than controlling the fire. This frequently results in larger, more costly fires with greater destructive potential.

As a general rule, wildland fire hazards do not preclude development; yet they do require that development meet special standards commensurate with the degree of risk. The California Department of Forestry has prepared, and Shasta County has adopted into its development standards Fire Safety Standards for Parcel Maps and Subdivisions in Shasta County. These development standards address access, road widths, bridges, building construction, and hydrant and water systems. A section on mitigation measures is also included. The proposed standards are particularly helpful in that they directly relate to fire hazard severity classifications.

Nonwildland Fire

Nonwildland fires include structural, chemical, petroleum, electrical, vehicle and other man-made material fires. Nonwildland fires, as opposed to wildland fires, also pose the greatest threat to human life and property. As these fires occur predominantly in urban areas, future urban development in Shasta County will undoubtedly increase the need for fire protection services.

FIGURE FS-1
Fire Hazard Severity Scale

CRITICAL FIRE WEATHER FREQUENCY →	I (1)			II (2)			III (8)		
FUEL LOADING ↓	SLOPE %			SLOPE %			SLOPE %		
	0-40 (1)	41-60 (1.6)	61+ (2.0)	0-40 (1)	41-60 (1.6)	61+ (2.0)	0-40 (1)	41-60 (1.6)	61+ (2.0)
Light (Grass) (1)	1	1.6	2	2	3.2	4	8	12.8	16
Medium (Scrub) (8)	8	12.8	16	16	25.6	32	64	102.4	128
Heavy (Woods-Brushwood) (16)	16	25.6	32	32	51.2	64	124	204.8	256

1-12.8 MODERATE HAZARD

16-32 HIGH HAZARD

51.2 256 EXTREME HAZARD

*Severity Factor Values are shown in Parentheses in the Table

In recent years, however, local governments in California have been confronted both with significant increases in the cost of providing fire protection services and a diminished ability to meet these costs due to Constitutionally imposed constraints on their ability to tax.

Fire Protection

Fire control agencies in Shasta County operate at all three levels of government.

Federal

U.S. FOREST SERVICE. The USFS is responsible for wildland fire control on all Forest Service administered lands and private wildlands within and adjoining Forest Service lands.

NATIONAL PARK SERVICE. The NPS provides protection for Lassen National Park and Whiskeytown National Recreation Area.

State

CALIFORNIA DEPARTMENT OF FORESTRY. The CDF is responsible for wildland fire control outside of Forest Service boundaries on approximately 1.2 million acres of mostly private wildlands. There are seven CDF Ranger Districts in Shasta County which support firefighting equipment and personnel, and three additional stations which serve the County, although located outside its boundaries.

Local

Fire agencies serving the unincorporated areas of Shasta County include twelve (12) community fire districts, eighteen (18) volunteer fire companies, and two (2) Shasta County Fire District stations, one at Anderson and the other at the Redding Municipal Airport. The eighteen volunteer fire companies are operated under the jurisdiction of the Shasta County Fire Department, as are the two County Fire District stations. The community fire districts on the other hand, are separate legal entities with legally drawn boundaries. Community fire districts have boards of directors and budgets separate from that of the Shasta County Fire Department. A listing of County fire districts and departments is provided in Table FS-1.

Many of the local fire agencies overlap with CDF and Forest Service jurisdictions. Local agencies are thus responsible primarily for nonwildland fires, while state and federal agencies respond primarily to wildland fires. In practice, however, all agencies work together and overlap duties when the need is present.

Sheriff Protection

The unincorporated areas of Shasta County receive general public safety and law enforcement services from the Shasta County Sheriff Department. Unincorporated areas are covered by four geographic patrol areas with substations in Pine Grove, Happy Valley, Palo Cedro and Burney. Each area has responsibility for several beats. Approximately twelve deputies report to each substation. In addition, the Lakehead and Shingletown areas have resident deputies.

TABLE FS-1

SHASTA COUNTY FIRE DEPARTMENTS AND FIRE DISTRICTS

Fire Departments (Volunteer Fire Companies)	Fire Districts
Bella Vista	Anderson (unincorporated areas)
Big Bend	Burney
Cassel	Castella
Centerville	Central Valley
Cloverdale	Cottonwood
Hat Creek	Fall River Mills
Igo-Ono	French Gulch
Jones Valley	Happy Valley
Keswick	McArthur
Millville	Mountain Gate
Montgomery Creek	Shasta
Oak Run	Summit City
Old Station	
Palo Cedro	
Shasta College	
Shasta Lake	
Shingletown	
Whitmore	

The Sheriff Department uses a rule of thumb of one officer per 1,000 population to estimate personnel requirements. The Department estimates the 1982 annual cost per officer was $25,000 exclusive of equipment costs.

The growth of Shasta County during the planning period will require expansion of the Sheriff Department to serve the needs of new residents of unincorporated areas. The service requirements generated by the tourist industry will also continue to be significant. Coordination between the Sheriff Department and Planning Department will be useful in identifying future service needs and areas where development could occur without generating new demands for sheriff protection. New developments in the unincorporated, urban areas of the County will need to use physical designs that develop a sense of community identity and self-protection.

Defensible Space

Crime prevention and protection from crime is especially important to the public's safety. Because crime is a tremendously complex social phenomena, it cannot be given proper consideration in the General Plan. Instead, the discussion of crime must be limited to that which is related to land use - the idea of "defensible space". This has to do with making our living environment safe and secure by considering crime prevention measures in site planning and structural design.

As Shasta County continues to grow, it is assumed that the County will not differ from other areas in that the crime rate will grow at least proportionally to the population growth rate and possibly faster. The unincorporated communities within the County can expect more urban lot subdivisions, more apartments, and more condominiums. All of these need protection from crime. A way of making our environment safer and more secure is to consider crime prevention measures in site planning and structural design.

Since humans display territorial behavior, the limits of one's territory and that of others should be well defined. This includes the area outside a dwelling, perceived by residents as outdoor extensions of their dwelling; their defensible space. This may be the entire area inside one's property lines or it may be a patio adjacent to an apartment. All other areas are considered semiprivate or public.

Numerous design techniques, many of which are quite subtle and only symbolic, can be used to create defensible spaces. This involves the use of various mechanisms which (1) promote a sense of territoriality; (2) provide physical and psychological barriers; (3) improve both public and private surveillance opportunities; and (4) strategically locate community activity areas.

Another measure includes well lighted and visible common areas and travel ways. Unlighted corridors and hallways are common areas where crime often occurs. Windows should be designed so entrance ways are visible from inside a residence. Walkways and entrances should be visible to the neighbors or from the street and these entrances should be well lighted. This permits a resident to be under natural observation from other residents. Also, designing neighborhoods with through, interior streets (as compared to dead-end roads) facilitates police patrolling, which in itself is a crime deterent.

By employing a combination of these devices and others, it is possible to provide a safer living area.

OBJECTIVES

FS-1 Protect development from wildland and non-wildland fires by requiring development to incorporate design measures responsive to the risk from this hazard and by encouraging development to locate in moderate fire hazard areas.

FS-2 Protection of life and property from crime by encouraging the incorporation of defensible space design techniques in the physical design of new development.

POLICIES

FS-a All land divisions and developments shall be required to conform to County Fire Safety Standards.

FS-b Known fire hazard information should be reported as part of every General Plan amendment, zone change, use permit, variance, building site approval, and all other land development applications subject to environmental assessment.

FS-c Fire Hazard Maps shall be kept on file by the County and used in conjunction with the adopted fire safety standards and development standards.

FS-d New development in areas designated Urban and Suburban should be encouraged to incorporate site planning and structural design features designed to deter crime.

FS-e Development in areas requiring additional levels of police and fire services shall participate in offsetting costs for the additional services.

FS-f The Sheriff and Shasta County Fire Agency should annually recommend to the Planning Commission standard conditions to apply to all projects relating to police and fire services including assessments for new services.

NOISE

INTRODUCTION

Government Code Section 65302(f) requires the preparation of a noise element, the primary purpose of which is to serve as a guideline for use in the development of a land use element designed to achieve a noise compatible land use pattern. Land uses are both receivers and generators of sound. A noise compatible land use pattern is one in which noise sensitive land uses are not adversely affected by surrounding uses, and in turn noise intrusive land uses are located in environments tolerant of their noise impacts. Supporting documentation for this element is found in Appendix B.

FINDINGS

The noise environment of Shasta County is not the same in all parts of the County and is directly related to the pattern of urbanization and associated transportation networks. Urban areas associated with Redding and Anderson are exposed to the higher noise levels in the County, while the rural areas are extremely quiet. This difference suggests that different approaches to the issue of environmental noise are required in each area. In general, the existing quiet areas of the County should be protected from noise generating land uses which could be located in more noise tolerant areas of the County.

Within the urban areas of the County, the major noise sources are associated with the circulation system. Analysis of the increases in the future traffic levels anticipated for this system indicate that adverse noise impacts, with certain exceptions, will be generally limited. Accordingly, the major land use noise compatibility issue in these areas is concerned with relating new development to the existing noise environment. This environment is documented in a noise environment map of the SCR area and Table 5 of Appendix B.

The exceptions to this general statement relate to areas which will experience significant traffic increases during the planning period. Traffic will increase in the Central Valley area and the corresponding noise increases will have major implications for existing and new development. A similar observation applies to the areas of new urbanization anticipated in the areas northeast and east of Redding. In these areas, the design of transportation improvements and the siting of new development should carefully consider noise impacts.

The rural areas of the County are considerably quieter than the urbanized areas of SCR. However, these rural areas are similar to SCR in that the major noise source is the circulation system, and future increases in traffic using this system will not result in significant noise impacts. Again, the major land use noise compatibility issue is concerned with relating new development to the existing noise environment, which is documented in Table 4 of Appendix B.

Figure N-1 on the following page, along with the Noise Element policies, supply the general guidelines necessary to achieve practical land use decisions in regard to noise. The noise exposure levels indicated in Figure N-1 are for exterior noise levels. There are two general situations for which this figure will be used: (1) either for locating noise sensitive uses near existing or potential noise generators, such as locating a residential subdivision near an existing airport; or

(2) locating noise generators near noise sensitive areas. For example, if a residential subdivision was proposed near Interstate 5, the exterior noise level must be at or below an acceptable level (60dBA CNEL) or the developer may be required to attenuate the exterior noise to that level. In cases in which outdoor noise cannot be attenuated , such as near an airport, the developer may instead be required to attenuate the indoor noise levels to 45dBA CNEL. In another example, if a noise generating use, such as an industrial use, is proposed near an existing residential area, the industrial use must attenuate its noise level at the residential property line to 60dBA CNEL or less.

The noise readings may be on either the CNEL or L_{dn} scale and shall be applied only to frequently recurring noise events using commonly accepted methods. Explanations of the CNEL and L_{dn} noise scales are contained in Appendix B.

OBJECTIVES

N-1 Protection of noise sensitive areas of the County by regulation of new noise-generating development.

N-2 Protection of noise sensitive new development from existing and future noise generators by regulations encouraging each to locate within compatible noise environments.

N-3 Protection of established noise-generating development from noise sensitive new development.

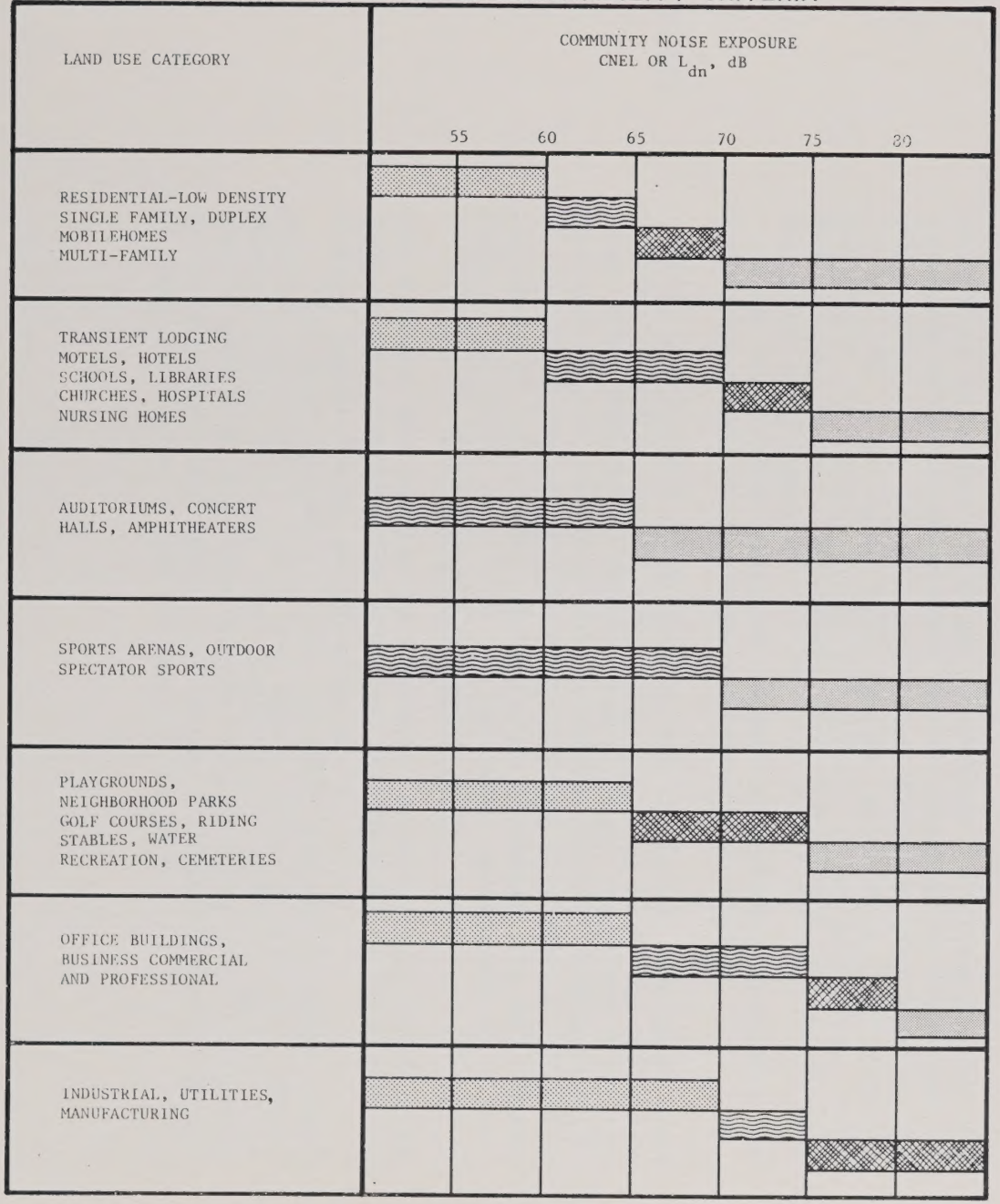
POLICIES

N-a New development shall use appropriate site planning and building design to reduce undesirable noise impacts. The noise sensitivity of land uses as established in Figure N-1 shall be used in the location of new development, the preparation of General Plan amendments, and the preparation of specific plans. The noise exposure level shall be established by reference to the noise exposure map of the SCR Planning Area, Tables 4, 5 and 6 of Appendix B or project-specific measurements or calculations.

The interpretive guidelines in Figure N-1 shall not be applied mechanically, but with the degree of flexibility required in each case to achieve a sound and feasible land use decision. However, in no case shall a residential land use be located where the existing noise environment, combined with the measured or calculated noise reduction of the type of structure under consideration, makes it impossible to maintain an interior noise environment at or below 45dBA CNEL.

N-b The planning and design of improvements in the circulation system shall consider their noise impacts on adjacent land uses and shall include measures to mitigate significant noise impacts.

FIGURE: N-I
LAND USE / EXTERIOR NOISE LEVEL COMPATIBILITY CRITERIA



INTERPRETATION

Normally Acceptable - Specified land use is satisfactory within the range specified, based on the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

Normally Unacceptable - New development should generally be discouraged. If new development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New development should generally not be undertaken.

HAZARDOUS MATERIALS

INTRODUCTION

Hazardous materials include all toxic, flammable, combustible, corrosive, poisonous, and radioactive substances. An important sub-category of hazardous materials are hazardous wastes. Hazardous wastes should not be confused with solid wastes, which are discussed in the Community Development Element Group.

Hazardous waste is defined as "a waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:

- cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or;

- pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed." (California Health and Safety Code Section 25117).

The discussion of hazardous materials and wastes in the General Plan falls under the authority of Government Code Section 65302(a) and (g); the land use and safety elements.

FINDINGS

Records of hazardous materials generation are maintained by the Hazardous Materials Management Section, California Department of Health Services. The most hazardous materials generated in the County are associated with mining activities, particularly extraction of copper, gold, and silver ores, bituminous coal, and natural gases. Pesticides and fertilizers are also very hazardous substances.

The three major concerns regarding hazardous materials are their transportation, storage and operational uses.

Transportation

Accidents involving hazardous materials during transport pose threats to public health and safety, particularly when accidents occur along heavily traveled routes such as Interstate 5 and the Southern Pacific Railroad line in Shasta County. Transportation of hazardous materials presents perhaps the highest disaster potential in the County. Regulations regarding the safe transport of hazardous materials and hazardous wastes should be contained in the Shasta County Emergency Plan.

Storage

The disposal and storage of hazardous materials has substantial implications for land use planning, as exposure to such materials may cause adverse health effects.

Effective January 1, 1981, Assembly Bill 2370 (1980) modified the California Health and Safety Code to give the Department of Health Services (DHS) authority to restrict certain land uses within 2000 feet (the "border zone property") of "hazardous waste property", defined as land where a hazardous waste disposal facility exists or has existed in the past.

If a permit is granted to any of these facilities, and there exists a significant disposal of hazardous waste on-site, the property is Hazardous Waste Property (HWP) by definition. No public hearing must be held prior to designation. The land surrounding these sites and extending up to 2000 feet from the location of disposal is potentially subject to designation as Border Zone Property (BZP). DHS has recommended that Shasta County inform all applicants for subdivision maps and building permits of the requirement that they must apply for a determination from DHS whether the project should be designated as a hazardous waste property or border zone property, if the following conditions exist:

- They are an owner, lessor or lessee of property within 2000 feet of one of the facilities listed above, and

- They plan to construct within the next calendar year a structure to be used for one of the following purposes:
  - A residence, including any mobilehome or factory built housing constructed or installed for use as a permanently occupied human habitation.
  - A hospital for humans.
  - A school for persons under 21 years of age.
  - A day care center for children.
  - Any permanently occupied human habitation other than those used for industrial purposes.

DHS regulations prohibit residential land uses including hospitals, day care centers and schools on hazardous waste properties, as well as any new land uses, except where variances are granted. State regulations further prohibit subdivision of such lands except where a subdivision would separate designated hazardous waste property from non-designated property. Land owners of these properties are additionally required to create easements permitting state officials from DHS to enter their lands in order to monitor hazardous waste storage.

State regulations regarding border zone properties are similar to those affecting designated waste properties with the exception that new land uses may occur on these lands without requiring a variance from the State Department of Health Services.

State regulations also provide that if the County knows or has probable cause to believe that any land within the County is a hazardous waste property or a border zone property, then the County may apply to DHS for determination whether the land should be designated under either classification.

According to DHS records, two possible hazardous waste facilities are located in Shasta County: one in Central Valley and a second in the vicinity of Shasta General Hospital.

On-site storage of hazardous materials is also regulated by the state through a permit process. An industry which uses corrosive chemicals, for example, must obtain a use permit from the Department of Health Services prior to operation. In addition, the industry or hazardous substance user may be required to obtain a conditional use permit from the city and/or county government. Storage or disposal of materials with potentially hazardous impacts on nearby watercourses may also be subject to requirements established by the Central Valley Regional Water Quality Control Board.

Permits for off-site storage of hazardous materials are not required unless the materials in question are "extremely hazardous" as defined by the California Administrative Code.

Use

Hazardous materials are used in many forms and activities throughout Shasta County. The most heavily used substances are herbicides and fertilizers used by foresters and agriculturalists.

Controlling timberland brush is an important issue in Shasta County because of the County's economic dependence on timber production. For many years, foresters have used herbicides as part of vegetative management programs designed to prevent brush competition with tree seedlings. Some chemicals contained in herbicides, however, are potentially dangerous air, water, and soil pollutants.

Some fertilizers and pesticides used by agriculturalists also pose potential threats to the health and safety of the human and natural environments. Adverse health effects of some fertilizers and pesticides are most threatening during periods of heavy rainfall when these chemicals may be washed off the land into streams and rivers, creating health hazards for human and wildlife populations. Run-off containing these chemicals may also penetrate into the soil and eventually contaminate the ground water supplies. (See also the Water and Water Quality Element)

Regulations regarding the use of these hazardous materials are administered by the State Department of Food and Agriculture in conjunction with the State Health Department. Any operation which discharges wastes into water bodies must also meet discharge requirements established by the Central Valley Regional Water Quality Control Board.

OBJECTIVES

HM-1 Protection of life and property from contact with hazardous materials through site design and land use regulations and storage and transportation standards.

HM-2 Protection of life and property in the event of the accidental release of hazardous materials through emergency preparedness planning.

POLICIES

HM-a The County shall make every effort to inform applicants for discretionary and non-discretionary projects which are located within potential border zone property of known hazardous waste facilities that they must comply with State requirements regarding hazardous waste facilities. A map shall be prepared and maintained which identifies these areas.

HM-b Shasta County shall maintain an emergency preparedness plan for hazardous materials.

HM-c Shasta County shall adopt policies for hazardous materials use, transportation, storage and disposal as required by State law.

HM-d Shasta County shall adopt policies for the protection of life and property from contact with hazardous materials through site design and land use regulations.

HM-e Any proposal for development of a disposal site for hazardous materials in Shasta County shall be reviewed closely to ensure that no significant environmental impacts will result from the project. Review of such project may include a determination of what type of hazardous materials may be disposed of at the dumpsite.

AIR QUALITY

For an in-depth discussion of air quality, see the Air and Air Quality Element under the Resources Group and Appendix C. The air quality heading has also been included in the Public Safety Element Group because air pollution is a serious environmental health problem. It poses a significant threat to human health and can cause damage to vegetation, animals, and their habitats. Air pollution is also aesthetically undesirable.

Due to topography, wind pattern, and atmospheric stability, the air pollution potential of Shasta County is quite high. While present (1983) air quality problems are not so severe to act as growth constraints, growth patterns over the next 20 years will be strong determining factors of future air quality.

WATER QUALITY

For an in-depth discussion of water quality, see the Water and Water Quality Element under the Resources Group and the Water Use and Wastewater Treatment Study contained in the background studies to the General Plan. The Water Quality heading has been included in this element group to emphasize its relationship to public health and safety, as water pollution may lead to serious environmental health problems. Threats to water quality specific to Shasta County include septic tank failure and streambank erosion. While presently considered "good", the water quality of the future is contingent upon the effectiveness of policies and programs designed to protect it.

Resources Group



The Resources Group includes General Plan elements addressing the preservation, management, and utilization of Shasta County's natural resources. The individual elements included in the Shasta County General Plan reflect both required and optional subject areas outlined in the General Plan Guidelines, and are listed below.

- Agricultural Lands
- Timber Lands
- Minerals
- Energy
- Air and Air Quality
- Water and Water Quality
- Fish and Wildlife Habitat
- Scenic Highways
- Open Space and Recreation
- Heritage Resources

As a group these elements address the range of opportunities presented by a diverse County resource base including opportunities for resource management, tourism, recreation, and aesthetic enjoyment. Together, these opportunities contribute to the County's attractiveness and desirability for residence.

These resources are all sensitive to human activities and may be destroyed or degraded if not addressed in the planning process. Thus, while it is important to maintain these resources for their direct and indirect benefits to people, protection and maintenance for their inherent ecological values must be recognized as well.

AGRICULTURAL LANDS

INTRODUCTION

Agricultural lands encompass Shasta County lands used for the production of crops and the grazing of livestock. Agricultural land uses are a major component of the County's economic base. They are also a major element in defining the quality of life available to the residents of Shasta County. Were agriculture to lose its prominence in the County, the rural character of County living so valued by its residents and so important to its economy would also decline or vanish.

This element encompasses portions of three mandatory elements--land use, conservation, and open space. The pertinent portions of these elements are quoted below.

> A land use element. . . designates the proposed general distribution and general location and extent of the use of land for. . . agriculture . . . (Government Code Section 65302(a).)
>
> A conservation element for the conservation, development, and utilization of natural resources including . . . soils . . . (Government Code Section 65302(d).)
>
> Open space for the managed production of resources, including . . . rangeland, agricultural lands, and areas of economic importance for the production of food or fiber . . . (Government Code Section 65560(b)(2).)

FINDINGS

Contribution to Shasta County

The County's total land area in farms was 396,223 acres[1] in 1978. Agriculture is not the dominant industry in Shasta County, but it does account for a major segment of the County's economic base. In 1980, the total market value of farm products was $53 million, over 1/3 of which was represented by the sale of livestock and livestock products.[2]

In addition to its economic contribution, the agriculture industry is in large part responsible for the rural lifestyle of the County. Farming necessitates a close relationship between the farmer and the land, fosters close relationships with family and community, and encourages self-reliance and independence. These characteristics define a way of life which tends to be assumed by those living in agricultural areas, even though they are not directly engaged in agriculture.

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[1] 1978 Census of Agriculture, Preliminary Report.

[2] 1980 Agriculture Crop Report, Shasta County Agricultural Commissioner.

Farmland retention plays an important role in the maintenance of wildlife values through the effects it has on conservation of wildlife habitats. Perhaps the most fertile wildlife habitat is the forest edge or point where forests joins fields, pastures or croplands. Often in such areas (called ecotones) the types of different species and their numbers are much greater than in the communities to either side. As farmland is developed for urban and suburban uses, the available habitat for most field and woodland edge species disappears, resulting in a decline or elimination of their populations.

It is also important to recognize the aesthetic values of farmland. Agricultural lands provide productive, privately maintained open space which contributes to the open, natural landscape of Shasta County.

Increasing transportation energy costs will in turn increase the prices of food supplies. While total local self-sufficiency in food production may never be a necessity or a possibility, the continued existence of agriculture in Shasta County does provide the option for some degree of local self-sufficiency in food production. In this regard, some interesting facts may be drawn from the 1980 Shasta County Agricultural Crop Report. During this year, Shasta County's agriculture industry produced. . .

- enough milk to provide each resident 1 cup of milk per day
- enough beef for each resident to have 107 pounds per year
- enough wheat for each resident to have 2 slices of bread per day
- enough honey to supply each resident with 3 pounds per year.[1]

General Characteristics of Farms

In Shasta County, the number of farms has been increasing and the average farm size has been decreasing, as shown in Table AG-1. This is the opposite of the national trend toward fewer but larger farms, though it reflects a phenomenon occurring throughout California and a number of other states, such as Arizona, Florida, Idaho, Oregon, Washington, and Maine. According to the most recent U.S. Census of Agriculture in 1978, approximately 32% of all farms were between 10 and 49 acres in size, as shown by Table AG-2. This in part explains why only 40% of the total land in farms is enrolled in Williamson Act Contracts which under Shasta County regulations require a minimum of 100 acres.[2]

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[1] Shasta County Agricultural Commissioner, letter of June 25, 1981.

[2] Total Shasta County acreage under Williamson Act contracts in FY 1978-1979 was 148,210. Source: State Board of Equalization.

TABLE AG-1

NUMBER AND SIZE OF SHASTA COUNTY FARMS[1]

	1978	1974	1969
Number of farms	1,046	778	746
Land in farms (acres)	407,914	391,896	548,494
Average size of farm (acres)	390	504	735

[1]To enable 1969 data to be compared with later data, the definition of farm used in this Table is that used in the 1969 Census of Agriculture.

Sources: 1978 Census of Agriculture, Preliminary Report, Shasta County, Page 4.
1974 Census of Agriculture, State and County Data, Page IV-259.

TABLE AG-2

FARMS[1] BY SIZE

Farms by Size	1978 Number/%		1974 Number/%	
Less than 10 acres	129	16%	118	17%
10 to 49 acres	257	32%	218	32%
50 to 179 acres	176	22%	110	16%
180 to 499 acres	115	14%	101	15%
500 to 999 acres	50	6%	52	8%
1,000 to 1,999 acres	38	5%	37	6%
2,000 acres or more	44	5%	43	6%
Total	809		679	

[1]Definition of farm is that used in 1978 and 1974 Censuses of Agriculture which differs from that used in Table AG-1.

Source: 1978 Census of Agriculture, Preliminary Report, Shasta County, page 1.

The size of farms is of importance because of its economic implications for the farm operator, which in turn has implications for land use regulations applicable to farm lands. Discussions of appropriate farm sizes frequently focus on the concept of the economically viable farm unit. This concept has its origins in the Reclamation Act of 1902 and addresses the question of the minimum size farm operation capable of sustaining a household. In Shasta County, and increasingly throughout the United States, the classic definition does not encompass all the complex policy considerations associated with planning for agricultural lands. There are various types of farm operations in Shasta County, and each has a different definition of viable farm unit. If County agricultural policy were to be based solely on the classic definition of a farm unit as providing some standard of household income, it would be at variance with the present structure and trends of agriculture nationwide. Therefore, it is necessary to examine the characteristics of farm operators.

Characteristics of Farm Operators

The 1978 Census of Agriculture Preliminary Report indicates that farming in Shasta County is largely a family-oriented, owner-operated enterprise. Approximately 89% of the County farms are operated by individuals or families, with partnerships (8%) and family-held corporations (2%) accounting for 10% of farm operations. About 93% of all farms are operated by either full or part owners.

As shown in Table AG-3, 84% of Shasta County farms had sales of less than $20,000 in 1978. The sales figures in this table are not in constant dollars, so comparisons between 1978 and 1974 are difficult. The important point made by this table is the substantial role in Shasta County agriculture played by lower sales value farms.

Tables AG-4, AG-5, and AG-6 reveal that in Shasta County farm operators are increasingly involved in goods and services operations. Rather than exclusively being producers of goods (agricultural products), many farmers provide various services as well. As shown in Tables AG-4 and AG-5, in 1978 60% of all farm operators had a principal occupation other than farming, and 57% of farm operators worked 100 or more days off the farm. Some off-farm work was provided for other farm operations in the form of custom farming services. However, most off-farm work was performed in nonagricultural pursuits, probably in employment opportunities associated with urban centers.

There are three types of farmers in Shasta County. They are:

- the full-time farm operator
- the custom farmer
- the part-time farm operator.

TABLE AG-4

PRINCIPAL OCCUPATION OF FARM OPERATORS[1]

	1978		1974	
	Number	%	Number	%
Farming	324	40%	286	43%
Other than Farming	485	60%	379	57%

Source: 1978 Census of Agriculture, Preliminary Report.

[1]1974 data exclude corporations and other organizations.

TABLE AG-5

FARMS WITH OPERATORS REPORTING
DAYS OF WORK OFF FARM

	1978		1974	
	Number	%	Number	%
Any off-farm work	518	64%	428	NA[1]
100 days or more	434	57%	370	NA[1]

Source: 1978 Census of Agriculture, Preliminary Report.

[1]Not available.

TABLE AG-6

FARMS WITH OPERATORS PROVIDING
CUSTOM FARM SERVICES FOR OTHERS

	1978	1974
Number of Farms	53	46
Income	$296,000	$84,000

Source: 1978 Census of Agriculture, Preliminary Report.

TABLE AG-3

SHASTA COUNTY FARMS BY VALUE OF SALES

	1978 Number	1978 %	1974 Number	1974 %
Sales of $20,000 or more	133	16%	97	14%
$100,000 or more	32	4%	22	3%
$ 40,000 to $99,999	44	5%	36	5%
$ 20,000 to 39,999	57	7%	39	6%
Sales of less than $20,000	676	84%	582	86%
$10,000 to $19,999	87	11%	62	9%
$ 5,000 to $9,999	122	15%	83	12%
$ 2,500 to $4,999	144	18%	112	16%
Less than $2,500	323	40%	325	49%

Source: 1978 Census of Agriculture, Preliminary Report.

The full-time farm operator is defined as an individual, family, or firm who usually owns the farm he/she operates in Shasta County and who considers agriculture his/her principal occupation. The full-time farm operator requires an area of land of a combined size and quality sufficient to provide the exclusive or primary source of annual income for the entity conducting the operation. This land area may comprise several discontiguous units.

The custom farmer is an individual who owns or rents and operates a farm in Shasta County[1]. While the custom farmer considers agriculture his/her principal occupation, the farm operation he/she owns or rents does not provide the exclusive source of his/her income. Money earned by performing custom farming services for others is an important source of income to the custom farmer. It is important to note the critical role played by the custom farmer in the continuity of agriculture in Shasta County. Custom farmers provide services necessary to both full and part-time farm operations.

[1]This discussion of custom farm operators is drawn from The Impact of the Sonoma County General Plan on Agriculture and Land Values, 1978, prepared by McDonald & Grefe in association with Sedway/Cooke.

Part-time farming is a significant trend in Shasta County and is part of a larger phenomenon occurring in industrialized countries throughout the world.[1] Individuals in this group are much more diverse than the members of the two previous categories and include:[2]

- Individuals with a significant outside income who have invested primarily in a homesite and lifestyle and who may, particularly prior to the Tax Reform Act of 1976, have been motivated by the provisions of the U.S. income tax laws to invest in Shasta County's agriculture.

- Individuals now employed elsewhere but who intend either during the working years or after retirement to become an active participant in agriculture.

- Individuals with significant capital assets who seek a secure investment vehicle for these assets, while at the same time, measuring return in terms of personal satisfaction as well as annual income.

- Families or individuals, possibly of rather modest means, who make a deliberate trade-off between economic return from agriculture and the ability to enjoy both an income and a lifestyle that are clearly and directly the result of individual efforts.

Whatever their particular motivations, part-time farmers make several unique contributions to the agriculture industry of Shasta County. Because part-time farmers have alternative, non-farm sources of income and are able to farm more intensively, their ability to operate a successful farming operation is enhanced. In many cases, they are able to conduct farming operations on lands which could not be successfully farmed by full-time operations.

Understanding that the motivations and economic circumstances of each type of farm operator differs from those of the other types demonstrates that there is no uniform definition of "viable farm unit." The land area required by the full- time farmer will generally be larger than that required by the part-time farmer. The agricultural element must recognize these distinctions and provide areas of land throughout the County of sufficient size and resource value so that all types of farm operators may be accommodated.

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[1] OECD Agricultural Policy Reports, "Part-time Farming in OECD Countries," General Report, Paris, 1978.

[2] The Impact of the Sonoma County General Plan on Agriculture and Land Values, op cit.

Characteristics of Agricultural Areas and Commodities

For the purpose of the Agricultural Element, Shasta County is divided into three types of agricultural areas and subunits within each area, as follows:

- Valleys
  - Sacramento River and tributaries
  - Fall and Pit Rivers
- Foothills
  - Western Uplands
  - Eastern Uplands
- Mountain Meadows
  - Goose Valley
  - Burney Creek Valley
  - Cayton Valley
  - Hat Creek Valley

Valleys

The valleys of the Sacramento River and its tributaries, including Churn, Cottonwood, Anderson, Stillwater, Cow, Bear, Battle and Clover Creeks, contain some of the most productive agricultural land in the County. Many hundreds of acres of land in these valleys are classified as prime, unique farmlands or farmlands of statewide importance.

Unfortunately, all of these lands are subject to urbanization pressures. Urban services such as community sewer and water and paved County-maintained roads are or could be made available to most of these lands. The classic example is the Churn Creek Bottom area which lies south of the Redding City limits and is traversed by Interstate 5 and Churn Creek Road.

Very few of these agricultural areas are subject to Williamson Act contracts. It is problematic whether this is the result of the proximity of urbanization, the 100 acre minimum limit currently in effect for Williamson Act contracts in Shasta County, or both. Many of the agricultural lands now under contract have filed notices of non- renewal. The earliest filing date was 1977.

The current primary uses of these lands are field crops orchard crops, strawberry nursery stock, and irrigated pasture.

In addition to the high quality of their soils, agricultural lands in this area enjoy a long growing season of from 172 to 205 days[1]. Water from either the Anderson-Cottonwood Irrigation District, Clear Creek Community Service District, surface diversions of streams, or irrigation wells is available. Excellent transportation access exists.

The Fall and Pit River Valleys contain highly productive agricultural lands. The value of these lands is reflected to some degree by their enrollment in Williamson Act contracts, none of which are subject to notices of nonrenewal. Some of the

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[1]University of California Cooperative Extension, Agricultural Study of the Churn Creek Bottom Area, 1975.

lands are subject to urbanization pressures from Fall River Mills and McArthur and rural subdivisions, but these pressures are presently limited both in geographic scope and intensity.

The current primary uses of these agricultural lands are field crops, strawberry nursery stock, and irrigated pasture. In comparison to agricultural lands located in the Sacramento River Valley, lands in the Fall and Pit River Valleys experience a shorter growing season and less precipitation.[1] These factors determine the productivity and economic return of these lands, which in turn impact on their ability to cover the costs of production. A production cost which is becoming increasingly significant in the Fall and Pit River Valleys is energy required for pumping irrigation water. A final factor is transportation of the agricultural products, since the Fall and Pit River Valleys are less accessible to the population centers than in the Sacramento Valley.

Foothills

The foothills located in the portion of Shasta County known as the Western Upland contain some of the best rangelands available in the County. Particularly noteworthy is the area known as the Bald Hills. Some small pockets of land classified as prime agricultural lands are located in the vicinities of Igo and Ono.

The primary use of these lands is livestock grazing. Grazing operations in this area enjoy good access to transportation associated with the Interstate 5 corridor and to the Shasta County Auction Yard located in Cottonwood. Almost all of the grazing lands in this area are subject to Williamson Act Contracts. None of these contracts have had notices of non-renewal filed on them.

Development pressures on these lands have been less intense than in other areas of the County. But this situation could change. Further development in this area would greatly increase the conflicts between ranching and residential land uses. Given their impact on grazing and the cattle industry, it is important to understand the nature of these conflicts.

Persons purchasing homes in agricultural areas generally desire the feeling of openness produced by their relatively larger homesites, the surrounding agricultural uses and the opportunity to engage in gardening and some animal raising, but not part-time farming. This type of rural residential development presents a number of problems impacting the adjacent lands used for grazing purposes. The discussion of these impacts which follows is also applicable to rural residential development located in all agricultural areas.

First and foremost, land used for residential purposes is usually unavailable for grazing purposes. Second, the unavoidable consequences of grazing and certain range management practices, such as controlled burning of brush, use of pesticides, tilling of land, noise and odors, and stray animals, adversely affect adjacent residents who in turn petition their elected officials to prohibit or restrict these activities. Third, adjacent residences adversely affect grazing operations by the destruction of fences, harassment and destruction of stock by trespassers and dogs, increased potential for wildfires, and greater demand for already limited water supplies. There are

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[1] Climate of Shasta County, August 1965.

also other less visible but significant conflicts related to the impact of rural residential development on land prices. As land is developed or merely subdivided for residential purposes, land prices increase, making it more difficult for ranchers to buy or lease land to maintain or increase the size of their grazing operations. People wanting to enter the grazing industry find that this is not financially possible.

The foothills situated in the Eastern Upland region of Shasta County contain rangelands equal in quality to those located in the Western Uplands, but this area does not contain a large block of excellent rangeland such as the Bald Hills of Western Upland. Several creek valleys, including Little Cow, South Cow, Old Cow, and Clover Creeks, contain lands classified as prime agricultural lands.

The primary use of these lands is for the grazing of livestock. Grazing operations here, like those in the Western Upland, also enjoy good access to the Interstate 5 transportation corridor. Almost all of the grazing lands in this area are under Williamson Act contracts. Notices of non-renewal have been filed for approximately 2,000 acres situated between Oak Run and Whitmore and for approximately 1,500 acres in the vicinity of Millville.

Development pressures in the Eastern Upland are significant. Conflicts between rural residential uses and grazing operations pose a major threat to the economic viability of the latter. The future of grazing in the Eastern Upland will in part depend on policies adopted by the Plan with respect to future rural residential development in this area.

The future economic viability of the rangelands in the Eastern Upland will also in part be determined by the success of the Shasta County Vegetation Management and Demonstration Project (SCVMDP), initiated in 1979.

> Range improvement burning has been practiced in Eastern Shasta County for a number of years both to improve grazing lands and reduce fire hazards. SCVMDP is designed to consolidate landowners and management practices into a coordinated resource management plan. Brush encroachment can be halted in the short run under this project by remov al of brush through control burns and/or mechanical and chemical treatment. The benefits of vegetation management to range improvement has been well documented. The Univer sity of California Cooperative Extension has an ongoing research program begun in the 1930's in Shasta County to demonstrate the value of brush reduction. Past projects have shown that livestock grazing can be increased three to four times over a six to ten-year period following an ini tial burn. Other benefits include improved wildlife habi tat, increased water yield, reduced soil erosion, and con trol of the air pollution impacts of brush burning. Long-range control of brush will require that landowners use better management practices; i.e., proper grazing use, fencing, water development, seeding of grasses, soil erosion control and proper class of livestock.[1]

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[1]The discussion is taken from California Department of Forestry, Shasta County Vegetation Management and Demonstration Project Report, pages 3-6.

If the SCVMDP proves successful and is applied beyond the current 200,000 acre project area, the livestock carrying capacity of the Eastern Upland will be enhanced. This in turn will have major implications for the cattle industry and the larger economy of Shasta County. But range management practices, such as control burns, do conflict with rural residential uses. This opportunity to enhance the economic productivity of the Eastern Upland will likely be foreclosed in the absence of policies in this element committed to its preservation.

Mountain Meadows

The mountain meadows, located above the 3,000 foot elevation in the northeast region of Shasta County, include the Goose, Cayton, Burney Creek and Hat Creek Valleys. These meadows are irrigated and are used for grazing and growing crops. About half of these lands are under Williamson Act contracts, none of which have filed notices of nonrewal. With the exception of the Hat Creek the Burney Creek Valleys, development pressures on these lands are minimal and likely to so remain. The Hat Creek Valley has been extensively subdivided, but future development of the lots created will depend on the availability of water. The Burney Creek Valley lies immediately to the north of the town of Burney and could be served by its water and sewer systems. The development potential of this area is limited by flooding problems.

Framework for Minimum Agricultural Parcel Sizes

This examination provides the basis for establishing ranges of minimum parcel sizes appropriate to the variety of conditions present in the County. These parcel sizes, which are presented in Table AG-7, provide a framework for plan policies designed to preserve agricultural lands in units capable of supporting agricultural operations. Table AG-7 presents minimum parcel sizes for both full and part-time operators.

In the case of the full-time operator, these minimum parcel sizes assume that it would be economically worthwhile to use a parcel for the primary use listed. Economically worthwhile means that the economic return on this property is attractive to a full-time operator. The concept of an economically worthwhile parcel size must be distinguished from the concept of a parcel capable of supporting a family. Under this latter concept, the minimum size of a parcel would in most cases exceed the minimum size under the concept of economically worthwhile. It follows that the full-time operator may require more than one parcel of an economically worthwhile size to support a family.

In the case of the part-time operator, it is assumed that a parcel of the size required would yield an economic return, but this return would not provide a self-sustaining annual family income.

TABLE AG-7

MINIMUM PARCEL SIZE REQUIREMENTS

Agricultural Area	Current Primary Use	Recommended Parcel Size Minimums[1] Full-Time Operators (Land Designated A-C or A-G)	Part-Time Operators (Land Designated A-cg)
Valleys			
Sacramento River	Field Crops	40	5
	Orchard Crops	40	5
	Nursery Stock	40	5
	Irrigated Pasture	120	5
	Grazing	760	
Fall & Pit Rivers	Field Crops	40	5
	Nursery Stock	40	5
	Irrigated Pasture	160	5
	Grazing	760	
Foothills			
Eastern Upland	Grazing	760	
	Irrigated Pasture	160	
Western Upland	Grazing	760	
	Irrigated Pasture	160	
Mountain Meadows			
Goose Valley	Irrigated Pasture	160	
Burney Creek Valley	Irrigated Pasture	160	
Cayton Valley	Irrigated Pasture	160	
Hat Creek Valley	Irrigated Pasture	160	

[1] In cases involving irregular sections the parcel size minimum may vary up to five percent but not more than that needed to adjust for the irregularity, whichever is less.

Source: This table was developed in cooperation with Shasta County Cattlemens Association and the Shasta County Farm Bureau.

OBJECTIVES

AG-1 Preservation of agricultural lands at a size capable of supporting full-time agricultural operations (designated on the land use maps as A-C or A-G) in order to allow the continuation of such uses and to provide opportunities for the future expansion and/or establishment of such uses.

AG-2 Preservation of agricultural lands at a size capable of supporting part-time, but not full-time, agricultural operations (designated on the land use maps as A-cg) in order to allow the continuation of such uses and to provide opportunities for the future expansion and/or establishment of such uses.

AG-3 Recognition by Shasta County residents that the preservation of agricultural lands for agricultural uses, both large and small scale, is in the public interest because it preserves local and regional food supplies and is an important contributing industry to the Shasta County economy.

AG-4 Recognition by Shasta County residents that preservation of agricultural lands, both large and small-scale, provides privately maintained open-space, facilitates a rural life-style, and requires community understanding of the problems facing ranchers and farmers.

AG-5 Protection of agricultural lands from development pressures and or uses which will adversely impact or hinder existing or future agricultural operations.

AG-6 Protection of water resources and safety systems used for agriculture.

POLICIES

AG-a Agricultural lands in Shasta County shall be classified according to three general categories based on the following criteria:

- Lands designated on the land use maps as A-G capable of supporting grazing by full-time operators, including:
  - Existing grazing lands used for this purpose.
  - Lands which are not now but could be used for this purpose based on resource characteristics (soils, climate, access to water) and compliance with the applicable parcel size minimums of Table AG-7.

- Land designated on the land use maps as A-C capable of supporting crop production by full-time operators, including:
  - Existing croplands used for this purpose.

- Lands which are not now but could be used for this purpose based on resource characteristics (soils, climate, access to water) and compliance with the applicable parcel size minimums of Table AG-7.

- Land designated on the land use maps as A-cg capable of supporting crop production by part-time operators, including:
  - Existing lands used for this purpose.
  - Lands which are not now but could be used for this purpose based on resource characteristics (soils, climate, access to water) and compliance with the applicable parcel size minimums of Table AG-7.

AG-b

Existing agricultural lands and other County lands meeting the criteria described in Table AG-7 shall be reviewed by the County at five year intervals to determine the appropriateness of either their current or potential classification as agricultural lands. The purpose of this review is to ensure that agricultural lands either currently or potentially preserved for agricultural uses merit such special treatment and to provide a systematic, uniform, and equitable process for the periodic review of certain current or potential agricultural lands. This review process shall be used judiciously. Removal of land from the agricultural designation shall occur only when evidence is provided which shows an overriding public need to develop the property for non-agricultural uses.

This review shall be conducted by the Planning Department with the assistance of an Agricultural Advisory Committee appointed by the Board of Supervisors.

Existing agricultural lands and other County lands may be nominated for review as follows:

- By resolution of intention by the Board of Supervisors or Planning Commission.
- By action of the Agricultural Advisory Committee
- By petition of the owner of such lands
- By recommendation of the Planning Department.

In its review, the Planning Department and the Advisory Committee shall address the following factors, and any recommendations presented by the Department shall explicitly state their relationship to these factors as follows:

- The local, state, and national interests in the preservation of agricultural lands to assure adequate, healthful, and nutritious food supplies.

- The availability of non-agricultural lands to serve the purposes which would otherwise require the conversion of agricultural lands into non-agricultural lands.

- The impact of the conversion of agricultural lands into non-agricultural lands (e.g. adjacent agricultural lands).

- The impact of the conversion of non-agricultural lands into agricultural lands (e.g., adjacent non-agricultural lands)

- The relationship between the geographic pattern of agricultural land use and the pattern of community development prescribed in the General Plan.

AG-c Lands designed on the land use maps as A-C or A-G shall be principally used for grazing and crop production.

In addition to these principal uses, lands so classified may be used for residential purposes accessory to the principal use. Such accessory residential uses shall be limited to "family member" housing and farm labor housing. Separately created legal lots not exceeding five acres in size may be created for family member housing or for purposes of financing as long as it can be demonstrated that the division will not infringe upon the viability of the agricultural operation. The number of family member parcels that may be created shall be determined in the zoning ordinance. Farm labor housing which includes both seasonal and annual employees shall be permitted at the rate appropriate to the type of agricultural operation and shall not be located on separate legal lots created for this purpose.

Lands classified as agricultural lands may also be used for low-intensity commercial recreation uses. As used in this context, low intensity commercial recreation uses are defined as uses which will not interfere with the principal uses of lands for agricultural purposes and do not require substantial improvements, including lodging facilities. Examples of low intensity recreation uses include hunting, fishing, target shooting, riding, hiking and boating.

Lands classified as agricultural lands may be used for mineral exploration and extraction purposes that will not permanently interfere with the principal uses of the lands for agricultural purposes.

AG-d In order to protect full time agricultural uses from incompatible land uses, lands being divided in areas designated either RA or RB that lie outside of the SCR area and that adjoin lands designated for full-time agricultural uses, shall comply with one of the following:

- If outside of a rural community or town center, the minimum parcel size shall be ten (10) acres or more depending on other policies or standards. Residential building sites shall be located, to the extent feasible, to avoid negative impacts on the adjacent land uses.

- If within a rural community or towncenter, the minimum parcel size shall be five (5) acres or more depending on other policies or standards. Residential building sites shall be located, to the extent feasible, to avoid negative impacts on the adjacent land uses.

- If it can be shown that topographic or man-made features will sufficiently separate the uses, the above mentioned standards shall not be applied.

AG-e Divisions of agricultural lands (designated A-C or A-G) shall comply with the following criteria:

- Any proposed division of land designated on the land use map as full-time agricultural lands shall require documentation that the division is necessary for continued full-time agricultural uses, except land divisions for family residences or financing (Policy AG-c), and that the proposed parcel sizes will not be detrimental to the economic viability of agricultural operations on said parcels or adjoining or nearby parcels. Examples of land divisions which may be necessary to allow continuation of agricultural uses include, but are not are not limited to, land sales or trades between agricultural operations; or the transfer or settlement of estates.

- Any proposed division of lands shall be for exclusive agricultural purposes, except in the case of family member residences or financing, and may be approved only if all the following conditions are met:

  - The size of the parcel(s) created shall conform to Table AG-7 with respect to the geographic location of the agricultural lands, their current primary use, and scale of operation.
  - No conflicts with adjacent agricultural operations will result from the division.

AG-f All lands classified as full-time agricultural lands shall be placed in a corresponding agricultural zone district and shall be eligible to enter into a contract, as provided by the Williamson Act (also known as the California Land Conservation Act of 1965) and applicable Shasta County agriclutural preserve standards.

AG-g The site planning, design, and construction of on-site and off-site improvements for non-agricultural development in agricultural areas shall avoid unmitigateable short and long term adverse impacts on facilities, such as irrigation ditches, used to supply water to agricultural operations.

TIMBERLANDS

INTRODUCTION

The Shasta County Timberlands Element is a combination of planning requirements from the mandated Land Use, Conservation, and Open Space Elements. Portions of these mandatory elements relevant to timberlands are cited below.

> A land use element which designates the proposed general distribution and general location and extent of the use of land for. . . natural resources. . . . The diagram for the land use element shall designate those parcels of real property for timberland production which have been so zoned pursuant to the California Timberland Productivity Act of 1982, Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5 (Government Code Section 65302(a).)
>
> A conservation element for the conservation, development and utilization of natural resources including. . . forests. . . the conservation element may also cover. . . protection of watersheds. . . . (Government Code Section 64302(d).)
>
> Open space for the managed production of resources, including. . . forest lands. . . . (Government Code Section 65560(b)(2).)
>
> Parcels zoned as timberland preserve shall be zoned so as to restrict their use to growing and harvesting and to compatible uses and shall be entered as a timber preserve element of the county general plan. (Government Code Section 51115.)

Forest management is the application of business methods and forestry principles to the operation of a forest property for the purpose of maintaining forest resources and producing a continuous supply of forest products. Forest management practices include but are not limited to site preparation, planting, harvesting, road construction, insect and disease control, inventory, and fire protection.

Land dedicated to commercial forest management provides not only building materials, firewood, County revenue, and employment opportunities, but also wildlife habitat, recreational opportunities, aesthetic enjoyment, and watershed. Continuance of timber operations and preservation of valuable timberlands are thus important to the economic base and the natural resource value of Shasta County. The Timber Element, therefore, relates present and future uses of timberlands to the natural resource management and economic and community development plans for Shasta County.

FINDINGS

One of Shasta County's most valuable resources is timberland. Of the County's 2,428,000 total acres, 50.3% or 1,223,000 acres is dedicated to commercial forest uses.[1,2] A breakdown of

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[1] Cooperative Extension - Forestry. University of California. 1979 Forestry Facts (for) Shasta County.

[2] Commercial timberland is defined as land capable of growing commercial tree species at a rate of 15 cubic feet per acre per year.

commercial forest land by ownership class is presented in Table T-1. As the table indicates, private timberland holdings are nearly twice those of public agencies, with forest industry and miscellaneous private corporations controlling over 50% of the total commercial timberland in the County. Smaller private operations (farmer-owned and noncorporate holdings) constitute only 13.3% of the total timberland of the County, yet nearly 21% of the total private holdings.

The timber industry is important to the economy of the State as well as the County itself. In 1979, the timber harvest from Shasta County was 248 million board feet valued at over $43 million. Compared with other timber producing counties in the State, Shasta ranks sixth in volume and seventh in value (see Table T-2). At the local level, the 1979 harvest provided $1.3 million in revenues based on a 3.0% yield tax rate.1

The timber industry is also a large contributor to Shasta County's employment base. The most recent (1978) statistics available show that approximately seven percent of the County's work force is employed by the lumber and wood products industry, but this figure does not accurately represent the total economic contribution of the County's timber resources. Accounting for the "multiplier effects" of dollars generated by the timber industry, it is directly or indirectly responsible for more than 40% of the County's basic employment,2 while wood products alone contribute 51% to the County's manufacturing employment base.3

The strength and importance of Shasta County's timber industry is expected to continue throughout and beyond the twenty (20) year planning period. National demand for softwood timber products is projected to increase 37% by 1990 and 70% by the year 2030.4 Based on these estimates it is likely that the demand for timber resources in Shasta County will increase. Further, due to the fact that nationwide demands for timber products are expected to rise faster than available supplies, higher prices for such products can also be expected over the next 50 years. Higher prices have positive implications for the County as they tend to promote more intensive forest management practices and improved utilization of wood products. Price increases also stimulate timber-based employment opportunities.

The nationwide trend in the timber industry is due to two major factors: (1) the post-World War II baby boom of the 1950's and 1960's which created an increase in housing (and lumber) demand, and (2) the gradual loss of timberland to non-timber uses (decreased lumber supply).

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[1] Op cit.

[2] McKillop, William, and Kent Connaughton; "Economic Importance of Forest Industries in Northern California." California Agriculture, May 1979.

[3] Salvador, Jean, Research Analyst, California Employment Development Department.

[4] Mills, T.J., and R. Alig, "Projections of Timber Supplies for the United States: 1976-2030." Proceedings of the Forest Production Research Society; San Francisco, California, October 1979.

TABLE T-1

COMMERCIAL FOREST LANDS IN SHASTA COUNTY BY OWNERSHIP CLASS

Ownership Class*		Acres	Percent of Total
1.	National Forest	374,000	30.5
2.	Other Public	67,000	5.5
	Total Public	441,000	36.0
3.	Private Forest Industry	231,000	18.9
4.	Private Farmer-Owner	94,000	7.7
5.	Misc. Private-Corporate	389,000	31.8
6.	Misc. Private-Non Corporate	68,000	5.6
	Total Private	782,000	64.0
7.	TOTAL - ALL OWNERSHIPS	1,223,000	100.0

* Key to ownership classes

1. "National Forest" lands are Federal lands which have been designated by Executive Order or statute as National Forests or purchase units, and other lands under the administration of the Forest Service.

2. "Other Public" lands include lands administered by the Bureau of Land Management (BLM); the Bureau of Indian Affairs; miscellaneous federal agencies; lands owned by states, counties, and local public agencies, and lands leased by governmental units for more than 50 years.

3. "Private Forest Industry" lands are owned by companies or individuals operating wood-using plants.

4. "Farmer-Owned" lands are those owned by operators of farms.

5. "Miscellaneous Private-Corporate" lands are owned by companies or corporations that do not operate wood-using plants. Included are corporate farms, some railroad lands, oil company lands, real estate and land holding company lands, and lands held by banks, other financial institutions and various other companies and corporations.

6. "Miscellaneous Private-Non Corporate" lands are privately owned lands other than forest industry, farmer-owned, or corporate lands.

Source: Cooperative Extension Forestry, University of California, 1979 Forestry Facts - Shasta County.

TABLE T-2

SUMMARY OF CALIFORNIA TIMBER HARVEST

May 1981[1]

County, Ranking by Volume	Volume (Thousand Board Feet)[2]	Percent of State Total	Dollar Value[3]	Percent of State Total	Ranking by Value
1. Siskiyou	510,190	13.04	76,554,000	10.30	4
2. Humboldt	463,303	11.83	129,159,000	17.39	1
3. Mendocino	329,854	8.42	83,649,000	11.26	3
4. Del Norte	294,771	7.53	97,095,000	13.07	2
5. Plumas	280,149	7.15	46,001,000	6.19	5
6. Shasta	248,322	6.34	43,072,000	5.80	7
7. Trinity	240,766	6.15	43,519,000	5.85	6
8. El Dorado	151,608	3.87	16,965,000	2.28	12
9. Tehama	139,323	3.55	25,817,000	3.47	8
10. Tuolumne	136,410	3.48	16,898,000	2.27	13
11. Sierra	135,156	3.45	22,183,000	3.00	9
12. Placer	134,651	3.44	22,122,000	2.98	10
13. Modoc	101,268	2.58	18,058,000	2.43	11
14. Lassen	99,496	2.54	14,737,000	1.98	14
15. Butte	85,946	2.19	12,769,000	1.71	15
		85.56%		89.98%	

[1]Derived from "1979 Summary of California Timber Harvest", State Board of Equalization, Property Taxes Department, Timber Tax Division, May 19, 1980.

[2]Board feet is the quantity cut and scaled - figures are in thousands of board feet.

[3]Value of timber immediately before cutting.

Source: Cooperative Extension Forestry, University of California, 1979, Forestry Facts - Shasta County.

The timberland supply is impacted due to the conversion of timberland to other land uses which are incompatible with timber operations and management. Additional loss of timber resources is attributable to parcelization into lot sizes inefficient for economic timber production.

Negative impacts of forest practices on surrounding land uses and resources create problems for timberland operations. Harvesting practices and the associated noise, dust, and traffic are potentially damaging to air and water resources, wildlife habitats, aesthetic enjoyment, and the health and safety of nearby residences. These problems are magnified as incompatible land uses locate closer to one another. It is thus in the best interest of all that provisions be made in the General Plan to avoid land use conflicts whenever and wherever possible.

Private timberland owners range from the large corporate land owner to the small woodland farmer. While the land use objectives for large-scale timber operators are fairly evident, opportunities and incentives for smaller operators to optimize yields from their lands are less so. For the small noncorporate timberland owner, economic barriers to increased timber production and a limited knowledge of existing timber management opportunities have been recognized as impediments to increasing timber supplies. Greater growth potential may be realized, however, with public education through cost-sharing and/or technical assistance programs.

OBJECTIVES

T-1 Preservation of timberlands suitable for forest management, in order to allow for the continuation of such uses and to provide opportunities for the future establishment of such uses.

T-2 Protection of timberlands from adjacent land uses which adversely impact forest management activities.

POLICIES

T-a Preservation of timberland shall be achieved by the use of the Timberlands use category. This category shall be applied to lands as follows:

- Lands now within a Timber Production Zone (TPZ) in accordance with the Forest Taxation Reform Act (hereinafter Act).
- Lands which may be eligible to enter into a TPZ in accordance with the "List C" procedure prescribed in the Act.
- Lands not contained within either of the above categories which are suitable for timber production as shown on the adopted land use maps.

T-b Timberlands within a TPZ shall be regulated as to use and subdivision as set forth in the Act. In addition to the permitted uses listed in the Act, other related and compatible uses may be conditionally permitted under applicable provisions of the zoning plan.

T-c Timberlands submitted for entrance into a TPZ in accordance with the List C procedure shall comply with all requirements of the Act and the land area concerned shall be comprised of single or contiguous parcels whose resource value(s) and size(s) comply with Table T-3.

T-d Timberlands not within a TPZ shall be subject to the County development standards and to the following requirements as to their use, and density of development.

Use

The primary use of these lands shall be for forest management. Secondary uses of these lands include uses which do not impede forest management or which process or utilize timber. Such uses include residential and recreational uses, mineral exploration and extraction and processing where the surface area will be reclaimed, permanent wood and woodwaste processing installations including power generation facilities, and small hydropower facilities.

Density

Timberland may be developed at the maximum residential density of one dwelling per 40 acres except, when 75 per cent or more of the portion of the parcel proposed to be developed is in a Dunning Site Classification of IV or V and is within one mile driving distance on a legal easement of a County paved road, the parcel may be developed at the maximum residential density of one dwelling per 10 acres. Pre-existing legal parcels that are smaller than provided above may develop at a density of one dwelling per parcel, subject to County Development Standards. For proposed land divisions involving irregular survey sections the density may vary up to five percent but not more than that needed to adjust for the irregularity, whichever is less.

Clustering

Developments on lands subject to a maximum density of 1 dwelling unit/40 acres may receive a 100 percent density bonus if the residences are clustered on parcels not larger than 2 acres per residence to minimize conflicts with adjacent timber management activities on the remainder of the property.

T-e In order to protect timberland uses from incompatible land uses, lands being divided in areas designated either RA or RB and that adjoin lands designated for full-time timberland uses, shall comply with one of the following:

- If outside a rural community or town center, the minimum parcel size shall be ten (10) acres or more depending on other policies and standards. Residential building site shall be located, to the extent feasible to avoid negative impacts on the adjacent land uses.

TABLE T-3

RESOURCE VALUE AND PARCEL SIZE REQUIREMENTS
FOR LIST C PROCEDURE

Resource Value			Minimum Parcel Size	
Dunning's Site Classification	or	Soil-Veg Site Class	Nominal Acres	Portion of Section
I		5	40	1/16
II		4	60	3/32
III		3	80	1/8
IV or V		2 or 1	80	1/8

Source: Society of American Foresters.

- If within a rural community or town center, the minimum parcel size shall be five (5) acres or more depending on other policies and standards. Residential building site shall be located, to the extent feasible to avoid negative impacts on the adjacent land uses.

- If it can be shown that topographic or man-made features will sufficiently separate the uses, the above mentioned standards shall not be applied.

T-f The County should encourage and promote the utilization of wood waste produced in the County.

At the other level, policies are used to address mineral resource areas too small to appear on General Plan maps. Because these areas are not geographically identified, it is difficult to specify compatible adjacent land use patterns. Instead, the conditional use permit process is used to mitigate land use conflicts. This process cannot work in all instances, such as intensively developed urban areas, and this fact must also be reflected in policies applicable to mineral resource areas too small to appear on General Plan maps.

OBJECTIVES

M-1 Protect known significant mineral resources from land uses, both onsite and offsite, which would be incompatible with mining operations.

POLICIES

M-a Large scale mineral resource areas shall be subject to the Mineral Resource land use designation. As is appropriate, based on the results of mineral resource exploration, additional lands may be placed in this category and lands presently subject to this category may be removed from it. Uses permitted in these areas shall include mineral exploration and extraction, processing, and accessory uses. Residential uses may be permitted for security and labor housing.

M-b Due to the natural distribution of mineral resources (including geothermal) throughout the County, mineral exploration, extraction, processing, and accessory uses, whose locations often cannot be identified in advance by the General Plan, shall be regulated through appropriate zoning regulations.

M-c Development and uses within and abutting Mineral Resource lands shall be regulated so that proposed future land uses will avoid or mitigate, incompatibilities with mineral extraction operations.

M-d Upon classification by the State Geologist of any land area in Shasta County as a Mineral Resource Zone (MRZ) or Scientific Resource Zones (SZ), pursuant to the State Mining and Reclamation Act, the County shall apply the mineral resource category to areas classified as MRZ-2 or SZ to protect such areas from development incompatible with mining.

M-e All approved mining or mineral extraction operations shall be accompanied by a reclamation plan for the rehabilitation, reuse, erosion control, and water quality protection of mineral resource lands.

M-f Salmon spawning gravels within critically important streams, as identified in policy FW-e, shall be protected.

MINERALS

INTRODUCTION

This element establishes policies guiding the use and development of mineral resources in Shasta County. It addresses the mineral-related subjects required by the state mandated Conservation and Open-Space Elements, Government Code Sections 65302(d) and 65560, respectively.

> "A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources...the Conservation Element may also cover...the location, quantity and quality of the rock, sand and gravel resources. (Government Code Section 65302(d).

The Government Code further requires an open-space element for those open-space lands "used for the managed production of resources including, but not limited to, forest lands, rangelands, agricultural lands... and areas containing major mineral deposits, including those in short supply." (Government Code Section 65560.)

Through the provision of building materials, revenue, and employment opportunities, mineral resources contribute significantly to the economic and resource bases of Shasta County. The Mineral Element is a fundamental component of the Natural Resources Group.

FINDINGS

Description of Resources

Shasta County is rich in mineral resources because it is situated at the "intersection" of five geologic provinces: (1) the Coast Range, (2) the Klamath Mountains, (3) the Sierra Nevada, (4) the Cascades, and (5) the Great Valley. Mining has played a significant role in the history and development of Shasta County. The 24 years between 1896 and 1920 were boom times for mining and established Shasta as the leading mining county in California. By the mid 1920s mining activities diminished due to pollution problems and national economic changes and as yet have not returned to former levels. In 1978, metal mining occurred only at the Washington Mine (lode gold) and the Iron Mountain Mine (copper) in the French Gulch Planning Area.

Along with copper and gold, the County's most significant mineral resources, 28 other mineral commodities have been mined commercially or occur in potentially economic quantities. Most of the metallic ores lie in Western Shasta County, the French Gulch district being the most important gold producing area of the region. The West and East Shasta Copper-Zinc belts contain the County's principal copper deposits. These belts extend from Iron Mountain northeastward to Backbone Creek, then east to Ingot, a distance of about 30 miles. In the past, mines in these belts have provided approximately 54% of the copper produced in California. This area also contains pyrite, iron and cadmium. Iron, molybdenum, chromite, borite and olivine may also be found in the northwest portions of Shasta County.

Between 1874 and 1929, local coal reserves were also in demand as an energy source for the County. By 1929, however, due apparently to the extensive development of natural gas resources, coal usage had virtually ceased. However, present economic trends, global energy shortages, and a commitment to reduce dependency on foreign oil reserves may reactivate local interests in coal extraction.

The majority of coal deposits are located in the Montgomery Creek Formation east of the City of Redding. The Montgomery Creek coal field has been estimated to be approximately 45 miles square and to contain 1,500 tons of coal per acre foot, making a total of over 12 million tons of coal potentially available in the Montgomery Creek Formation.[1]

Other commercial mineral deposits in Shasta County include diatomite, limestone, volcanic cinders and pumice, sand, gravel, and stone. Diatomite is found in considerable quantities near the confluence of Hat Creek and the Pit River (North East Shasta County). Limestone occurs in four belts within the County. The western belt consists of scattered outcroppings west of Shasta Lake. The second and largest belt is located in the vicinity of Gray Rocks, the northernmost section of the SCR planning area. A third consists of lands east of Ingot, extending approximately to the north fork of Squaw Creek, and the last belt is an isolated exposure along route 299E. The Genstar Company quarry in the Gray Rocks belt is the only currently active limestone quarry, although all four belts have been mined during early parts of the century. Pumice and cinders have been mined from at least 13 intermittently active cinder pits in eastern Shasta County, and because of the importance of these materials in road building as well as other development, demands for these resources can be expected to continue. This is also true for sand and gravel deposits which occur along streambeds, floodplains, and river terraces throughout the County. Currently, sand and gravel are two of Shasta County's principal mineral products.

Mineral Extraction Issues

Although mineral resource development is in many ways beneficial to Shasta County, mining operations often contribute to noise, air and/or water pollution problems, impose hazards to the public health and safety, destroy wildlife habitat areas, and degrade scenic resources. It is thus necessary that Minerals Element policies address the need to (1) protect mineral resources from preemption by incompatible land uses in order to preserve future resource utilization and management options, and to (2) protect adjacent resources and land uses from the negative impacts of extractive operations.

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[1] Leeds, Dennison K. "Coal Prospects of Northern California," (prepared for Cooksley Geophysics Inc., Redding, CA) 26 March 1980.

Role of State Government

In 1975, the California legislature enacted the Surface Mining and Reclamation Act to ensure the prevention or mitigation of the adverse environmental effects of mining, the reclamation of mined lands, and the production and conservation of mineral resources consistent with recreation and watershed, wildlife and rangeland objectives. Under the Act and the Board's regulations, the State Geologist must classify mineral areas of the state threatened by incompatible land uses that would preclude mining as one of four Mineral Resource Zones (MRZ) or a Scientific Resource Zone (SZ) as shown in Table M- 1.

The purpose of the classification and designation process is to insure that mineral deposits are available when needed. Counties and cities containing areas classified as Mineral Resource Zone 2 (MRZ-2) or designated as mineral deposits of regional or statewide significance must amend their general plans to include the state information on the mineral deposits and policies for managing them. The Act outlines the procedures by which the State Geologist classifies areas containing minerals, the Board of Mining and Geology designates deposits, and local governments must amend their general plans (Public Resources Code Section 1720 et seq.).

The State Board's classification of mineral lands statewide will take several years, yet it has established priorities to ensure that mineral lands most likely to be converted to uses incompatible with mining are classified first. No classification has been completed in Shasta County. Prior to state designation, local governments may begin their own classification procedures, and these efforts should be coordinated with the State Board and the State Geologist.

Role of Local Government

The role of local government relative to mineral resources is complicated by factors distinguishing the extraction of these resources from other land uses. Much more than other land uses, mineral extraction is extremely site-specific; it can only occur where the resource exists. Given its resource dependence, this land use must end once the resource is exhausted, leaving the problem of appropriate future uses of the former extraction site.

Shasta County contains several areas that potentially meet the requirements of the MRZ-2 classification, as shown in Table M-1. In addition, there are many other areas of the County which contain significant mineral resources which are not threatened by incompatible land uses. The geographic size of these areas varies considerably. In some instances these areas are quite large in other cases these areas are relatively small. Given these differences in size as they relate to General Plan maps, the mineral resources of Shasta County are best addressed at different levels of detail.

At one level, the mineral resources land use designation is used on General Plan maps to identify relatively large areas or districts which are or potentially could be used for mineral extraction operations. Typically these areas, in whole or in part, are under the ownership or control of firms engaged in such operations. Since these areas are mapped, it is possible to develop land use patterns in adjacent areas which are compatible with mineral extraction.

TABLE M-1

MINERAL RESOURCES CLASSIFICATION

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates that significant[1] mineral deposits are present or where it is judged that a high likelihood for their presence exists.

MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated from available data.

MRZ-4: Areas where available information is inadequate for assignment to any other MRZ zone.

SZ: Areas containing unique or rare occurances of rocks, minerals, or fossils that are of outstanding scientific significance.

Source: Guidelines, Title 14, California Administrative Code, Chapter 8, subchapter 1, Article II, Section 1(2).

[1]An area which contains an ongoing mine, or has a strong prospect of mineral resources and the test data has been evaluated by the State Geologist.

At the other level, policies are used to address mineral resource areas too small to appear on General Plan maps. Because these areas are not geographically identified, it is difficult to specify compatible adjacent land use patterns. Instead, the conditional use permit process is used to mitigate land use conflicts. This process cannot work in all instances, such as intensively developed urban areas, and this fact must also be reflected in policies applicable to mineral resource areas too small to appear on General Plan maps.

OBJECTIVES

M-1 Protect known significant mineral resources from land uses, both onsite and offsite, which would be incompatible with mining operations.

POLICIES

M-a Large scale mineral resource areas shall be subject to the Mineral Resource land use designation. As is appropriate, based on the results of mineral resource exploration, additional lands may be placed in this category and lands presently subject to this category may be removed from it. Uses permitted in these areas shall include mineral exploration and extraction, processing, and accessory uses. Residential uses may be permitted for security and labor housing.

M-b Due to the natural distribution of mineral resources (including geothermal) throughout the County, mineral exploration, extraction, processing, and accessory uses, whose locations often cannot be identified in advance by the General Plan, shall be regulated through appropriate zoning regulations.

M-c Development and uses within and abutting Mineral Resource lands shall be regulated so that proposed future land uses will avoid or mitigate, incompatibilities with mineral extraction operations.

M-d Upon classification by the State Geologist of any land area in Shasta County as a Mineral Resource Zone (MRZ) or Scientific Resource Zones (SZ), pursuant to the State Mining and Reclamation Act, the County shall apply the mineral resource category to areas classified as MRZ-2 or SZ to protect such areas from development incompatible with mining.

M-e All approved mining or mineral extraction operations shall be accompanied by a reclamation plan for the rehabilitation, reuse, erosion control, and water quality protection of mineral resource lands.

M-f Salmon spawning gravels within critically important streams, as identified in policy FW-e, shall be protected.

ENERGY

INTRODUCTION

Until the Reagan presidential administration, much of the energy conservation focus had concentrated on state and national policies and programs. At this time, however, local governments are the public bodies which will be most effective in directing energy uses in the years ahead. To a large extent, our national energy situation is no more than an accumulation of local energy trends throughout the entire nation.

The optional energy element is included in the Shasta County General Plan in recognition of this fact. Energy use is an integral part of daily life and has been included as a separate element in order to draw attention to its importance in the planning process.

The energy element establishes guidelines for the managed use and conservation of imported energy supplies and discusses the potential for development of locally available alternative energy resources.

FINDINGS

Energy Use Pattern

There are two general types of energy use: operational and embodied. Embodied energy is the energy bound into materials and goods during the manufacturing and construction process. For example, the energy embodied in a house includes the energy used to harvest, mill, and transport the lumber; to produce and transport masonry; and to transport workers to and from the building site. Operational energy is the energy consumed in the day-to-day heating, cooling, and lighting of buildings and the movement of people and goods.

Energy consumed at the point of end use is referred to as delivered energy. In analyzing the energy use pattern of a community or region, it is useful to categorize delivered energy by sector, such as residential, commercial, transportation, etc. The estimated 1980 delivered use by sector in the unincorporated area of Shasta County is shown in Figure E-1. With the exception of the residential and government sectors, each sector represents some combination of operational and embodied energy consumption. This energy use pattern is relatively typical of most communities in that the transportation sector accounts for over 50% of the total energy consumption. In unincorporated Shasta County, the slightly higher percentage consumed by this sector is explained by the rural nature of the area and the consequently longer travel distances from home to work, home to service centers, etc. After the transportation sector, the manufacturing and residential sectors account for an estimated 22% and 14% respectively of total delivered energy use.

Energy Supply

The supply side of the energy pattern of Shasta County is shown in Figure E-2 which estimates 1980 delivered energy consumption by fuel type. With the exception of a portion of the electricity, these fuel types represent energy derived from sources whose supply is limited and will eventually be depleted. These energy sources are called nonrenewables and are distinguished from renewable energy sources whose supply is unlimited or can be replenished. Solar and wind energy are clearly renewable energy sources. If managed properly, hydroelectric power, wood, and geothermal energy can also be considered renewable energy sources.

FIGURE E-1
Estimated 1980 Delivered Energy Use By Sector, Unincorporated Shasta County

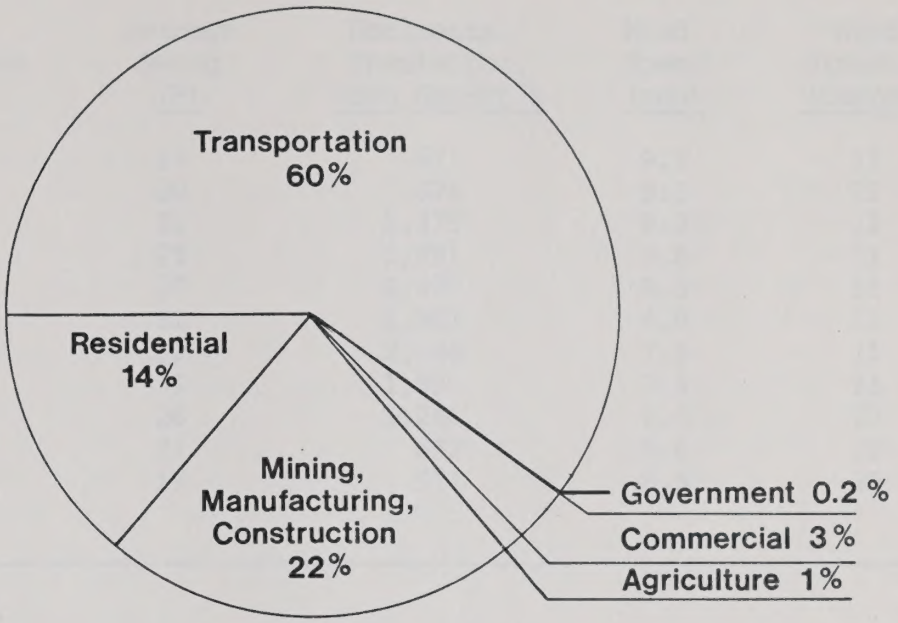


FIGURE E-2
Estimated 1980 Delivered Energy By Fuel Type

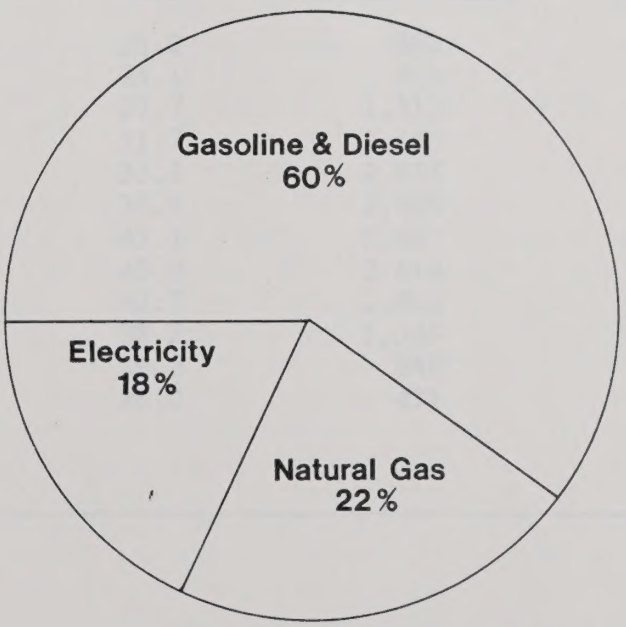


TABLE E-1: AVERAGE MONTHLY WEATHER, REDDING, LATITUDE 40.2

Month	Average Temperature (F)	Average Swing (F)	Horizontal Insolation$_2$ (Btu day-ft^2)	Wind Speed (mph)	Wind Direction (degrees)
1	45.2	17	671	9.1	11
2	50.0	20	874	9.3	11
3	53.2	21	1,475	9.9	11
4	59.5	25	1,891	9.6	11
6	75.5	27	2,470	9.3	11
7	82.3	31	2,503	8.0	11
8	79.9	32	2,046	7.6	11
9	75.3	31	1,803	7.9	11
10	65.0	26	1,261	8.4	23
11	53.7	21	682	8.6	23
12	46.4	17	571	8.5	23

Source: Sedway/Cooke.

TABLE E-2: AVERAGE MONTHLY WEATHER, ALTURAS, LATITUDE 41.5

Month	Average Temperature (F)	Average Swing (F)	Horizontal Insolation$_2$ (Btu day-ft^2)	Wind Speed (mph)	Wind Direction (degrees)
1	27.8	24.2	682	6.5	0
2	32.0	24.1	955	6.5	0
3	38.4	27.7	1,512	6.5	0
4	45.6	31.7	2,186	6.5	0
5	52.0	33.3	2,614	6.5	0
6	58.9	36.1	2,665	6.5	0
7	66.5	43.1	2,887	6.5	0
8	64.4	45.9	2,614	6.5	0
9	57.1	43.7	1,913	6.5	0
10	47.9	38.2	1,346	6.5	0
11	38.0	29.9	848	6.5	0
12	32.3	25.0	471	6.5	0

Source: Sedway/Cooke.

Solar

The sun is an abundant energy source in most of Shasta County. Table E-1 summarizes average monthly weather data in Redding representing conditions in valley locations. Table E-2 summarizes weather data for mountain areas, represented by Alturas which is located to the east of Shasta County.

The value of the sun as an energy resource can be expressed most meaningfully in terms of the demand for conventional energy sources that can be displaced by its use. Solar energy can be used directly for space and water heating and for industrial process heat.

The sun is also important as it affects the demand for energy. High summer temperatures in the Sacramento Valley result in a high seasonal peak demand for electricity for space cooling and refrigeration. The impact of solar radiation on the cooling load of buildings can be moderated to a significant extent through building and site design.

Passive solar design for space cooling and heating can reduce the annual primary energy demand of a typical 1,600 square foot, single family detached house in the Sacramento Valley by 90%, from 286 million Btu (equivalent to 2,288 gallons of gasoline) for a house built before 1975 without insulation to 14 million Btu (112 gallons of gasoline) or less. To achieve such energy savings requires nothing more than efficient construction, insulation, 200 square feet of south facing window area combined with a heat-storage mass (e.g., slab foundation) or 1,000 square feet of window area, a roof overhang on the south side, and shade on the east and west sides of the building. Energy used for water heating can be reduced by 50% from 38 million Btu (equivalent to 304 gallons of gasoline) to 18 Btu (144 gallons of gasoline) for a family of four with the use of 64 square feet of solar collectors (two 4 foot by 8 foot panels).

In the mountain areas the energy used for space conditioning could be reduced from 333 million Btu (equivalent to 2,664 gallons of gasoline) to 31 million Btu (248 gallons of gasoline) as a result of passive design. A 64-square foot solar water heater could reduce energy use for hot water from 42 million Btu (330 gallons of gasoline) to 21 million Btu (168 gallons of gasoline).

Solar energy can be used in a similar way in the commercial sector for space conditioning, water heating, and electricity and in the industrial sector for process heat and electricity. For example, Heart Federal Savings & Loan Association in Redding uses a solar heating and cooling system. Jhirmack Enterprises, located in the Mountain Lakes Industrial Park, uses active roof-top solar collectors instead of gas-fired boilers.

In order to take advantage of the solar energy resource directly through passive design, water heating, and electricity conversion, it is necessary to locate buildings in areas where solar radiation is not blocked by the topography or by trees. For example, on north-facing slopes of greater than five or ten percent, the availability of sunlight during the winter is likely to be severely constrained. Such locations would require alternative methods of energy- efficient design (e.g., earth sheltering or tighter construction with air-to-air heat exchangers) to achieve the same level of energy use possible with passive design in other locations. The same holds true for heavily forested areas.

At the site and neighborhood design scales, solar access to roof tops and south windows could not be blocked by adjacent structures or trees during the heating season. The provision of solar access would not impose a constraint on the density of development. Solar access to the south windows of townhouses at densities of 12 to 18 units per gross acre of development can easily be accommodated at Shasta County's latitude.

In order to preserve the opportunity for using photovoltaics on buildings in the future, a portion of the roofs of new buildings should face within about 45° south or should be flat (e.g., 400 square feet of a 1,600 square foot, single family house).

Hydroelectricity

Moving water is one of the most important energy sources for Shasta County. The conversion of moving water to electricity (hydropower or hydroelectricity) generates more electricity than consumed throughout the County. Hydroelectricity is generated at large scale facilities, such as Shasta and Keswick Dams and facilities located along the Pit River, Hat and Battle Creeks, and is also becoming utilized on a smaller scale and is referred to as "low-head hydro power."

The interest in hydroelectric generation has been growing at a rapid rate in Shasta County, as a response to the increased costs of oil-produced electricity along with the large potential for small scale hydro projects within the County.

Potential hydroelectric sites identified in Shasta County include the ACID Diversion Dam at Lake Redding, Musselbeek Dam on Rainbow Lake, McCumber Lake Dam on Battle Creek, and the McCloud Reservoir. Many other potential sites were not identified, including the proposed Cottonwood Creek Dams. It has been estimated that these two dams combined could produce 9 megawatts of electricity.

Shasta County's intricate network of streams and creeks provides excellent opportunities for the development of small-scale hydroelectric facilities.

Biomass

Biomass (organic matter) is an indirect source of solar energy. In the form of scrap or waste wood, it is a major energy source for Shasta County industry. Another opportunity for biomass conversion in Shasta County is the use of wood for home space heating. Wood burning stoves are presently very popular throughout the County and are utilized both as a primary source of home heating and as a back-up for electrical usage.

Other biomass conversion opportunities available in Shasta County include the conversion of agricultural crops to liquid fuel and the use of solid waste as a source of fuel for energy production.

Wind

Wind machines (windmills) can convert wind energy into mechanical or electrical energy and are used primarily to pump water. The present use of windmills in Shasta County is limited, yet opportunities for greater use of wind power exist in valley and mountain areas of the County.

Cogeneration

Cogeneration involves the use of waste heat (heat generated as a by-product of a process) or waste materials (garbage, wood pulp) to produce heat or electricity.

Cogeneration is currently utilized at the Paul Bunyan, Hudson, Roseburg and Simpson Lumber Companies in Anderson. Although these processes do not allow these plants to be self-sufficient, the cogeneration systems do generate enough energy to supply a majority of the plants' power needs during peak demand periods.

Role of Government

Our nation's energy policy is a reflection of what is being done at the local level of government. There are three roles which local government may play regarding energy use: One is to act as an educator, informing and encouraging its citizens as to the benefits of energy conservation. As an energy consumer, government can use its own actions in these areas as models. Local government may elect to act as a provider of incentives, usually financial, to encourage energy conservation. Third, local government may exercise its police power to adopt regulations requiring energy conservation. Since they have the force of law, regulatory approaches will have the greatest chance of success, but administrative and enforcement costs are high.

County Energy Strategy

Shasta County's energy strategy should focus on the major sectors of energy consumption; transportation, manufacturing, and residential; and should recognize the distinction between nonrenewable and renewable energy resources. County government should use all options to develop and implement this strategy.

OBJECTIVES

E-1 Increased utilization of the County's renewable resource base including passive and active solar, wind, small-scale hydroelectric power, biomass, and geothermal.

E-2 Conservation of nonrenewable energy resources, specifically raw materials, transportation fuels, and land area, through the recovery and recycling of solid waste materials.

POLICIES

E-a During the development of the urban plans for the spheres of influence for Redding and Anderson, the County, in conjunction with the two cities, shall work towards a land use pattern that would support a regional transit route.

E-b At the community level, the County shall adopt land use patterns which reduce the need to travel outside the community for basic commercial services.

E-c County government shall review its energy consumption performance and implement programs designed to increase energy efficiency.

E-d County government should promote the development of solid waste disposal sites serving both incorporated and unincorporated areas to enhance the economic feasibility of a resource recovery and recycling program.

E-e County ordinances and regulations shall be reviewed to eliminate barriers to the use of renewable energy resources.

E-f Priority shall be given to energy projects and programs that provide jobs and other economic benefits within the County for County residents.

E-g Education to encourage and facilitate individual action shall be a primary means of achieving energy objectives.

AIR AND AIR QUALITY

INTRODUCTION

The Air and Air Quality Element presented below addresses the requirements of Government Code Section 65560 b(4) (the Open Space Element) which calls for the establishment of policies and programs designed to protect "open space for public health and safety, including but not limited to . . . areas required for the protection and enhancement of air quality".

In addition to the policies and programs set forth in their General Plans, state and local governments are required to follow the policies, standards, procedures, and deadlines established by the Federal Clean Air Act of 1977. According to this law, each state must prepare an implementation plan to meet the Act's requirements. California's State Implementation Plan (SIP) consists of control measures which are designed to achieve the National Ambient Air Quality Standards (NAAQS) by the legal deadlines and maintain these standards thereafter. Two components of the SIP have particular importance for Shasta County, Non- Attainment Plans and Prevention of Significant Deterioration (PSD).

Non-Attainment Plans

The Clean Air Act amendments of 1977 require the identification of areas which do not meet national air quality standards (NAAQS). These areas are referred to as "non-attainment areas" and require the preparation of a Non- Attainment Plan which must contain legally enforceable measures which will lead to attainment of the federal standards.

Prevention of Significant Deterioration (PSD)

The 1977 amendments to the Clean Air Act also require that the SIP take the measures necessary to prevent significant deterioration of air quality in regions where air quality standards have been met. The delegation of authority with regard to the PSD program may be obtained by the local district only after a PSD rule has been submitted and adopted by the district and approved by the Environmental Protection Agency. The legislation establishes three classes for determining how much further deterioration would be allowed in levels of sulfur dioxide and total suspended particulates. Class I areas are allowed the smallest increment of deterioration, and Class III the largest. There are currently two PSD Class I zones in Shasta County: Lassen Volcanic National Park and the Thousand Lakes Wilderness Area.

Good air quality is important to County residents and is one of the factors frequently used to describe their living environments. A clean air environment is not only essential to public health; it also adds to the enjoyment of the scenic beauty of Shasta County.

County Air Basins

Shasta County contains portions of two air basins, the Northeast Plateau Air Basin (NEPAB) and the Sacramento Valley Air Basin (SVAB). The portion of the NEPAB in Shasta County is located on the Modoc Plateau in the eastern portion of the County. It is separated from the SVAB, to its southwest, by the Cascade Range.

The towncenters of Burney/Johnson Park and Fall River Mills/McArthur are located in the NEPAB. For purposes of this report, when references are made to either the NEPAB or the SVAB, the discussion will refer only to the portions of these air basins that are located within Shasta County.

The elevation in the Shasta County portion of the SVAB is as low as 360 feet and gradually increases into the mountains on the north, east and west. The lower regions (SCR) contains approximately 83 percent of the County population. By the year 2000 this is expected to increase to 87 percent.

FINDINGS

Appendix C contains a detailed examination of air quality in Shasta County. Major findings of this study are outlined below.

Air Pollution Potential

A key factor in the determination of an area's air quality is its "air pollution potential"; the relative ability of the airshed to dilute and disperse pollutants, based on topography and climate. Air pollution potential is independent of emissions, so that an area with a low potential for air pollution, even if heavily developed, may have better air quality than a lightly developed area with a high potential for air pollution. The factors which affect air pollution are topography, wind, and atmospheric stability.

Due to mountainous terrain, calm winds and fairly stable atmospheric conditions, the air pollution potential in the Shasta County portion of the SVAB is quite high. In a nationwide survey of air pollution potential, the interior of northern California and southern Oregon were found to have the highest potentials for air pollution in the United States.[1]

Inversions occur in the SVAB with great frequency in all seasons, with the most stable conditions occurring in the late fall and winter. Inversions act as barriers to pollutants, and in valley areas form a "lid" under which pollutants are trapped. This situation increases concentrations of pollutants at or near the ground surface.

Annual statistics show that inversions are between the surface and 1,000 feet 53% of the time at Chico, 89% at Red Bluff, and approximately 96% at Medford, Oregon.[2] It can be seen that the frequencies increase as you move north and the expected frequencies for the SVAB below 1,000 feet elevation could be much greater than Red Bluff due to the strong influence of the surrounding mountain areas.

A common misconception is that the air quality problems in the lower elevation areas of Shasta County are a result of transport of pollutants from areas to the south. The concept is neither fully true nor false but must be examined in relation to the pollutants causing the problems in Shasta County, mainly ozone and particulate matter.

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[1] G.C. Holzworth, Mixing Heights, Wind Speeds and Potential for Urban Air Pollution throughout the Contiguous United States, U.S.E.P.A., Office of Air Programs, Pub. No. 101, January 1972.

[2] Rick Booth, Shasta County Air Pollution Control Officer, memorandum dated August 2, 1983.

In 1979, the ozone standard was exceeded in Sacramento 25 days, in Willows and Chico 3 days, and in Redding 22 days.1 If Sacramento was the major source of pollution, this pattern would show a decline in ozone levels as one moves north, rather than the existing sharp drop at Chico and Willows followed by a sharp increase at Redding. However, when the wind comes from the south, the recorded values of ozone do increase. Due to complex reactions in the ozone formation process and the time involved for such reactions, a case for ozone transport can be made. However, precursors generated in our own area are still a major cause of our problem.[2]

Examination of data for suspended particulates also does not reveal a consistent pattern supporting the idea that the Sacramento metropolitan area can be blamed for the majority of the pollution in Shasta County. The only period of the year where the particulate matter transport occurs in a noticeable amount is during the peak agricultural burning season in the Sacramento Valley from September 15 to November 15.3 As a note, it also can be assumed that if the particulate matter from such burns is transported to our area, so are the other constituent pollutants such as carbon monoxide and hydrocarbons.

Current Air Quality

Air quality within the Shasta County portion of the NEPAB is condsidered to be good and not currently close to violating any Federal air quality standards. EPA has designated the region as "unclassified" since there is not enough monitoring data available to make a clear determination of "attainment".

The SVAB portion of Shasta County has been close to violating the Federal standards for ozone and particulates. The consequences of violating Federal standards include impacts to the public's health and welfare and more stringent controls on industries and commercial operations.

Strategies that have been locally implemented to reduce ozone levels include controls on: gasoline vapor emmissions during transfer of gasoline to storage tanks, dry cleaning operations, use of degreasing solvents and use of cutback asphalt. Additionally conical burners used by some local sawmills to dispose of wood waste have been phased out. Also, the State-imposed motor vehicle emission controls have been able to reduce emissions over a wide cross-section of the population.

Present control strategies for particulate matter are tied stationary sources (industrial operations) and fugitive dust. These sources are controlled at present by requiring installation of control devices, converting to more efficient processing, and watering material piles (such as in mining) to reduce dust.

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[1]The California ozone standard is used here in order to show a comparison of ozone pollution levels as one moves north through the Sacramento Valley.

[2]California Air Resources Board, The Origin and Fate of Pollutants in the Sacramento Valley Air Basin, MRI 81 FR-1842, December, 1981, and Shasta County Air Pollution Control Officer, memorandum dated September 15, 1982.

[3]Ibid

The primary source of particulate matter in Shasta County is generated by unpaved roads, which accounts for 39% of all particulates. While the County Air Pollution Control District does not have the authority to regulate unpaved road dust, the County can regulate it through policies established in the General Plan and implemented through County development standards.

Pollutants, Standards and Enforcement

The Federal Clean Air Act of 1977, as amended, establishes air quality standards for six pollutants. These standards are divided into primary standards, designed to protect the public health, and secondary standards, intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage.

For purposes of this General Plan, policies and strategies are based on Federal standards rather than State standards. The Federal standards are accepted measurements of air quality, they consider public health and other environmental impacts, and they are tied to the imposition of Federal Control measures. The State of California has since adopted its own, more stringent standards.

The statewide air pollution control agency is the California Air Resources Board (CARB). The CARB has primary responsibility for air quality planning, and sets standards for motor vehicle emissions. The Shasta County Air Pollution Control District has authority to grant permits for new sources, test and inspect air pollution sources, and issue permits for agricultural and other types of burning. The District processes citizen complaints on emissions or odors and can enforce its regulations through permit revocation and abatement proceedings.

Future Air Quality

According to the County Air Pollution Control Officer, the County's industrial sources of particulate matter are already well controlled by requirements for the installation of the best available control techniques. Similarly, Shasta County has a complete set of regulations concerning ozone pollution. Therefore, future control strategies will most probably have to be directed toward other sources of the County's air pollution problem. Further, future control strategies should be focused on the areas below 1000 feet elevation, where 89% of the inversions are expected to occur and the greatest portion of the population growth will be accommodated over the 20 year planning period.

Recognizing that the potential for air pollution problems below 1000 feet elevation is very high and that the air quality within the SVAB is close to violating Federal standards, it is probable that violations of the standards will occur in the near future. The specific timing of when violation of the Federal standards will occur, however, is too speculative to determine, and will depend on control strategies established by the County.

According to the Air Pollution Control District emission estimates, the primary contributor of particulate matter in Shasta County is unpaved roads. Substantially greater amounts of particulate matter is generated from unpaved roads than is estimated to result from any other source of particulate dust in Shasta County. In comparison to paved roads, unpaved roads generate 95% more dust per mile of roadway. Paving of unpaved roads can substantially reduce the major source of particulates and thereby substantially reduce the chance of violating the Federal particulate standard.

Vehicles are the primary contributor of ozone. Although the County does not control vehicle emissions through the General Plan process, the County can develop a land use pattern that minimizes vehicle miles traveled. The General Plan can establish a concentrated land use pattern that minimizes the amount of vehicle miels traveled, thereby, minimizing increases in ozone pollution.

Because of the many variables involved, it is difficult to quantify the degree of pollution control that is achieved by either a concentrated or a dispersed land use pattern. Assuming population growth as given, neither alternative can avoid violations of the ozone standard. However, the concentrated land use pattern has the primary advantages of reducing overall travel distances and making a transit program more feasible to establish. Therefore, this alterative may delay violation of the Federal ozone standards longer than would the dispersed land use pattern.

OBJECTIVES

A-1 Protection of the air quality of the two air basins of Shasta County as an important aesthetic and health resource which may be affected by local land use decisions.

A-2 Protection of the air resources so that all County residents, both now and in the future, can enjoy the benefits of clean air.

A-3 Maintain a Countywide air quality monitoring network.

A-4 Recognition that due to mountainous terrain, calm winds, stable atmospheric conditions and wind transport of pollutants from the south, the air pollution potential of Shasta County is high.

POLICIES

A-a Land use decisions shall be made with consideration given to maintenance and, if possible, the improvement of air quality. New development projects shall be conditioned to mitigate air quality impact.

A-b Shasta County shall strive to meet and maintain all Federal standards for air quality.

A-c Maintain a monitoring program that determines the ambient air concentrations of those pollutants that have a national ambient air standard which have a significant impact on the County's air quality.

A-d In order to allow the population densities permitted by the General Plan, the County development standards shall be modified to require the paving of roads to the degree necessary to mitigate potential significant adverse air quality impacts on an individual or cumulative basis from particulate matter.

A-e Shasta County shall play an active role in the Sacramento Air Basin Control Council to support basin improvements in air quality.

WATER AND WATER QUALITY

Introduction

The water issue in Shasta County is extremely complex. For this reason, water is discussed in each of the three element groups: Public Safety, Resources and Community Development. Flooding and dam inundation are discussed in the Public Safety Group. Water supply for domestic purposes is discussed in the Community Development Group and in the study entitled Water Use and Wastewater Treatment in Shasta County contained in the background reports to the General Plan. The impacts of human activities on the availability and quality of water in Shasta County are the subjects of this element.

This element contains a discussion of water resources as required by the state mandated Conservation and Open-Space Elements.

Under the Conservation Element, state law requires:

> A conservation element for the conservation, development and utilization of natural resources including water and its hydraulic force . . . (and) rivers and other waters . . . The conservation element may also cover: . . . (3) Preservation and control of the pollution of streams and other waters . . . (5) Prevention, control and correction of the erosion of soils, beaches, and (6) Protection of watersheds (Government Code Section 65302(d))

Under the Open-Space Element, water resources are designated as open-spaces when considered as any one of the following:

- Open-space for the preservation of natural resources including ... rivers, streams, bays, and estuaries; ...lakeshores, banks of rivers and streams, and watershed lands; (and)

- Open-space for the managed production of resources including ... areas required for recharge of ground water basins, bays, estuaries, marshes, and rivers and streams which are important for the management of commercial fisheries..." (Government Code Section 65560(b))

FINDINGS

Water Supply

The majority of the water available for use in Shasta County is collected in the mountainous regions of the County. Streams, creeks, and rivers carry these surface waters to lower elevations, where they are eventually stored in lakes, reservoirs, and groundwater basins. Whiskeytown Reservoir and Shasta Lake are major surface water storage facilities.

The U.S. Bureau of Reclamation, at the time of the construction of Shasta and Whiskeytown Dams, acquired substantial appropriative rights from the state. The bureau then entered into contracts for the sale of that Central Valley Project (CVP) water to service agencies in Shasta County and elsewhere. There are currently 14 public agencies and private parties in Shasta County contracting for CVP water. These contracts cover approximately 254,000 acre feet of water.

Two groundwater basins within the County, the Redding and Fall River Valley basins, have been identified as significant sources of groundwater. In addition, volcanic and alluvial soils that contain groundwater, known as water bearing soils, are located in the Northeast, Lassen, Eastern Forest, and portions of the Eastern Upland and possibly Western Upland Planning Areas. Water bearing soils provide most if not all of the water used by existing development in these areas. Unlike geographically definable groundwater basins, however, the locations and amount of water found in alluvial and volcanic soils is unpredictable.

The water use and wastewater treatment report contains an extensive discussion of the surface and groundwater resources of Shasta County. A major conclusion of this discussion is that the water resources of Shasta County are more than adequate to meet its existing and future needs. The problem is that these resources are not uniformly distributed throughout the County. This fact has major implications for the geographic distribution of future growth, as discussed in the Community Development Group.

Another important finding of this study is the lack of precise, quantifiable data on the groundwater resources of the County, including the Redding and Fall River Valley groundwater basins. Safe yields, the maximum quantities of water that can be continuously withdrawn from a groundwater basin without adverse effect, on these and other groundwater basins, are unknown. This has implications for the process by which water is stored in these basins.

Groundwater basins and water bearing soils are recharged (replenished) by the natural process of percolation. This is a process whereby rainwater collects in a water table by filtration through the soil. Natural features are essential to groundwater recharge, particularly floodplains and streams that pass over gravel or other porous materials. The flat agricultural lands of the Sacramento River Valley and the Fall River Valley are the most significant areas for this process in Shasta County. It is important that these types of features are protected so that water transfer to ground basins is maintained. Preservation of natural recharge systems is particularly important for Shasta County as there are no human processes to augment them. In many counties where urbanization is widespread, groundwater bodies are artificially recharged by using water from reservoirs. Shasta County has not yet experienced a level of growth and development resulting in groundwater overdrafting, and therefore artificial groundwater recharge is not yet justified.

Water Quality

For the most part, surface water quality in the County is very good, as is indicated by healthy fish populations and thriving recreational fishing activities. Potential hazards to surface water quality include concentration of nitrates and dissolved solids from agriculture, septic tank failures, and run-off from urban areas. During the winter months water pollution potential increases as surface runoff increases due to heavy rains. The additional runoff often carries with it unwanted substances which eventually flow into surface waters. Among these substances are oil and grease from automobiles and streets, sediment from construction sites, litter, animal wastes,

pesticides, and heavy metals such as lead from auto exhaust, old mining sites and other air pollutants.

Along the Sacramento River, chemical and physical water quality is usually within desirable limits for most uses, although quality tends to deteriorate during periods of heavy runoff. Biochemical oxygen demand (BOD) in the river rarely exceeds the 2.5 mg/l desirable limit for domestic uses.[1] High coliform (bacteria) counts are sometimes recorded, however, thus requiring filtration and chlorination of water prior to drinking.

Surface water pollution is also caused by erosion. Excessive grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased sedimentation and erosion of stream banks, particularly in rapidly moving waters. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins.

The quality of water in underground basins and water-bearing soils is also generally good. As these basins or soils are the primary sources of water in the rural upland areas of the County, it is very important to prevent contamination. A potential hazard to groundwater quality involves the concentration of nitrates and dissolved solids from agricultural practices, and septic tank failures.

The ability of soils to support septic tanks or onsite wastewater treatment systems is generally severely limited in Shasta County. Septic tank failures have occurred in Shasta County, but the magnitude of this problem is largely unknown. The County has adopted more stringent standards regarding their use. These standards have promoted interest in alternatives to the conventional septic tank and leach field.

OBJECTIVES

W-1 Protection of the surface and groundwater resources so that all County residents, both now and in the future, have reasonable assurances that an adequate quantity and quality of water exists.

POLICIES

W-a Sedimentation and erosion from development shall be minimized through ordinances and implementation mechanisms as adopted by the County.

W-b Septic systems, waste disposal sites, and other sources of hazardous or polluting materials shall be designed to prevent contamination to streams, creeks, rivers, reservoirs, or groundwater basins in accordance with standards accepted by or imposed by the County.

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[1] Biochemical oxygen demand (BOD) is a measure of the detrimental effects of organic matter upon a stream. The more organic matter present, the higher the BOD, and the less oxygen available for normal aquatic life processes.

W-c All proposed land divisions and developments in Shasta County should have an adequate water supply, from a quantity and a quality standpoint, for the planned uses. Furthermore, the potential adverse impacts on the existing reasonable and beneficial uses of that same water supply should not be significant. Project proponents shall submit data and reports which demonstrate that these criteria can be met. In the case of land divisions, the reports shall be submitted to the County for review and acceptance prior to a completeness determination of a tentative map. This policy will not apply to developments in special districts which have committed, in writing, to provide the needed water supply.

FISH AND WILDLIFE HABITAT

INTRODUCTION

The objectives and policies contained in this element address the need to preserve unique and important fish and wildlife habitats and plant communities for their inherent ecological values, as well as their direct benefits to the citizens of Shasta County. The Fish and Wildlife Element incorporates requirements from the state mandated Conservation and Open Space Elements; Government Code Sections 65302(d) and 65560, respectively. Passages from the codes dealing with fish and wildlife resources are quoted below:

> A conservation element for the conservation, development and utilization of natural resources including . . . fisheries, wildlife, . . . and other natural resources . . . . (Government Code Section 65302(d)).

> Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitats for fish and wildlife species; (and) areas required for ecologic and other scientific study purposes . . . (Government Code Section 65560(b)(1)).

FINDINGS

Fish and wildlife habitats and plant communities contribute significantly to aesthetic enjoyment, County based recreation, income and scientific research. Natural habitat areas are also important to the preservation of ecological balances and environmental quality.

Important wildlife habitats in Shasta County, as identified by the California Department of Fish and Game (CDFG), include ten deer winter ranges, supporting deer herds as well as other flora and fauna species; a key oak-woodland habitat in the Oak Run-Whitmore area; numerous riparian (streamside) communities; and wetland habitats associated with Big Lake and Fall River.

There are three endangered and seven rare animal species known to inhabit Shasta County. The term endangered is used to describe species whose existence is jeopardized by one or more causes, including loss of habitat, predation, competition, or disease. Although not presently threatened with extinction, rare species are of populations so small that they may become endangered should their environmental conditions deteriorate. The endangered species in Shasta County are the Southern bald eagle, the American peregrine falcon, and the Bull trout. Classified as rare are the wolverine, the Shasta salamander, the Sierra Nevada red fox, the rough sculpin, the Shasta crayfish, the greater sandhill crane, and the Swanson's hawk.

The many rivers, creeks, and lakes in Shasta County provide habitat for numerous fish species. The Fall, Pit, and McCloud Rivers support large populations of rainbow and German brown trout, as do Burney, Hat, and Lava Creeks, and Baum, Crystal and Eastman Lakes. The Sacramento River is famous for its large salmon and steelhead fisheries, plus excellent trout fisheries above and below Shasta Dam. Other game fish in Shasta County waters include black bass, crappie, blue gill, and catfish.

One rare and endangered plant specie, Orcuttia tenuis, is also found in Shasta County.

Resources by Planning Area

The following section briefly discusses the critical wildlife resources of each of the ten (10) planning areas. The data was gathered by the California Department of Fish and Game.

Sacramento Canyon

Within this planning area lies the 30,000 acre Sacramento River Canyon Deer Winter Range, located along the west side of Interstate 5 in the Sacramento River Canyon. Peak population in December is approximately 1,500 deer. Black bear are also abundant in this area, and intensive development has and will continue to result in bear depredation problems. Bald eagle nests, and Shasta salamander habitats are also found in this region, particularly in the southern portions and around Shasta Lake.

Northwest Forest

Bald eagle nests and Shasta salamander habitats occur in the southern portions of this planning area, primarily in the vicinity of Shasta Lake, and the endangered Bull trout may be found along reaches of the McCloud River.

Big Bend

The Big Bend planning area contains many excellent trout fishing waters, provides nesting sites for the Southern bald eagle and peregrine falcon. Wolverines have also been sighted in the vicinity of Carberry Flat and on U.S. Forest Service lands north of Bald Mountain and in the Kosk Creek Basin. Portions of two critical wildlife habitats; the Whitmore-Oak Run Critical Wildlife Area and the Lake Britton Deer Winter Range also extend into the Big Bend area from North East Shasta County, and are described in more detail below.

North East Shasta County

North East Shasta County is extremely rich in wildlife resources. Significant areas identified by CDFG include three deer winter ranges and the Fall River-Big Lake Wetlands.

The three deer winter ranges; the Lake Britton, Cindercone, and Day Bench Ranges, together cover approximately 82,000 acres in the North East Planning Area, and support an estimated 8,600 deer during the winter and spring from mid-October through April.

Eastern Forest

This planning area supports the eastern portions of the Cow Creek Deer Winter Range as described in the Eastern Upland section. In addition, this region provides nesting and foraging areas for the bald eagle and peregrine falcon.

Eastern Upland

The Cow Creek Deer Herd migrates through the Eastern Upland Planning Area from November through mid-April of every year. The entire Cow Creek Deer Winter Range, which covers land in both the Eastern Upland and Eastern Forest Planning Areas, hosts an estimated 7,800 animals and covers over 90,000 acres.

The Whitmore-Oak Run Critical Wildlife Area is perhaps the most diversified habitat in Shasta County, and as such the area supports a wide range of wildlife species including many economically important game species. The area is also a migration corridor and feeding ground for approximately 6,000 black-tailed deer.

Bear, Cow and Battle Creek are among the area's many trout fishing waterways.

South Central Region (SCR)

The most ecologically significant community in the SCR area is the riparian woodland association found along the Sacramento River and its tributaries. This plant community provides habitat for many animals and plants. Presence of the riparian woodland association also helps prevent erosion of the Sacramento River banks.

The reach of the Sacramento River in Shasta County is also an important anadromous fish spawning corridor. High sustained river flows controlled by operations at Shasta and Keswick Dams, however, scour the river bottom, eroding essential gravel beds and preventing effective spawning on the river bottom. Further, presence of these dams restricts the movement of gravel down river, thus severely limiting supplies to the south. Anadromous fish populations are also threatened by the removal of riparian vegetation, irrigation diversions, and changes in water temperature due to a variety of river uses. Further, bank protection activities, such as rock riprap designed to prevent erosion of alluvial soils, often adversely affects fish and wildlife habitats as well as the natural beauty of the waterway.

In general, any cause for the disruption of watercourse ecosystems will reduce the habitat diversity of the surrounding region. Cumulative impacts of urbanization can have serious adverse impacts on water resources not only of Shasta County but of the entire Sacramento River basin as well. If properly managed, however, it is possible to provide ample water supplies, protect water quality, and still meet the needs of a growing County.

Bald eagle nests are located along the shores of Shasta Lake. The peregrine falcon also inhabits the northern Sacramento Valley, and while it does not nest in the SCR, it is sometimes seen foraging the river.

The Department of Fish and Game (DFG) has expressed concern regarding problems confronting the Day Bench deer herd. Based on a two-year study of deer movement, migration corridors, fall and spring holding areas, summer ranges and seasonal habitat requirements, the DFG has developed land use recommendations for each of the three counties (Shasta, Lassen, Modoc) which support this large herd.

Since the Day Bench area of the North East Shasta Planning Area has experienced a great number of land divisions, the DFG has recommended that no further divisions take place. According to DFG officials, the few remaining large parcels are extremely valuable to deer as they shield deer populations/habitat from the potentially negative impacts of human disturbance.

The General Plan designates the Day Bench area as NH-RB-C, which is Natural Resource Protection-Habitat, combined with a Rural Residential B and the Clustering (C) designation. This designation identifies the critical habitat but permits a rural residential density of one dwelling per 5 acres as long as the proposal is clustered to protect the habitat. While this designation is expected to have some negative impacts on deer migratory patterns and/or habitat quality, these impacts can be reduced by design measures addressing the size and location of lots created by subdivisions, the siting of structures on lots, and the size and placement of fencing and other barriers. Design measures appropriate to development and subdivision proposals are best determined on a case by case basis in which the project proponent works closely with the Department of Fish and Game. Particular attention should be given to the clustering of dwelling units on small lots so that large lots may be created and kept undeveloped for habitat purposes.

The Fall River-Big Lake Wetlands supports numerous springs which eventually give rise to Big Lake, Tule River, and Little Tule River, all of which converge to form Fall River. These waterways are lined with riparian vegetation intermixed with meadows and lowland marshes, creating an excellent fish and wildlife habitat. The Fall River Valley itself is Shasta County's most important waterfowl nesting area, providing habitat for over 400 pair of ducks and 135 pair of Canadian Geese annually. Approximately 88 bird species and 67 mammalian species have been identified in this region, and the Fall River itself has been rated as one of the best trout rivers in California, primarily due to exceptional water quality conditions.

The North East Planning Area also supports populations of the Southern bald eagle and the American osprey. The osprey has been federally designated as a sensitive specie, yet this bird has not been listed as either rare or endangered in California. A large concentration of osprey nests are located in the northeast region of the planning area surrounding Lava Springs State Park. Wolverines have also been sighted in the vicinity of Pit River Woodland and in the southwest corner of the planning area.

Western Upland

The Western Upland Planning Area contains two zones of the Platina Deer Winter Range. The entire range is approximately 45,000 acres and supports 4,500 deer from October through April. The southeast portion of the range has the highest known concentration of black-tailed deer in Shasta County with an estimated 75 to 100 deer per square mile.

Cottonwood, Begum and Jerusalum Creeks support substantial bass, trout and other fishes.

French Gulch

French Gulch contains one deer winter range covering 47,000 acres and supporting approximately 3,300 deer. Bald eagle and osprey nesting areas have been sighted in the vicinity of Whiskeytown Reservoir, and wolverines are suspected to roam Highland Ridge as well as lands along the Shasta-Trinity County line north and west of the Rural Community Center of French Gulch.

Many of the streams and creeks in this planning area support stable trout populations, while bass and other panfish are found in the Whiskeytown Reservoir.

Resource Protection

Land use controls within critical wildlife habitat areas are designed to be no more restrictive than necessary to protect the resource.

In all areas designated on the land use maps as Natural Resource Protection-Habitat (N-H), except portions of the Day Bench area, the maximum residential density is indicated on the map. However, if a proponent chooses to cluster development and incorporate other habitat protection features, he may be able to double the density. For example, a developer with 200 acres located in area designated for one dwelling per 40 acres would be able to create 5 parcels if he chooses not to cluster. If he clusters and provides other mitigations that reduce the impacts created by the additional density to the same level of impacts created by the forty acre parcels, he may double his density up to 10 dwellings.

In the portions within the Day Bench area designated N-H-RB-C, a residential density of one dwelling unit per 5 acres is permitted provided that the development is clustered and it incorporates design features that protect the habitat.

OBJECTIVES

FW-1 Protection of significant fish, wildlife and vegetation resources.

FW-2 Recognition that wildlife habitat and agricultural and timber management practices may on occasion be in conflict and shall be resolved according to policies specified in the Plan.

POLICIES

FW-a Significant wildlife habitat resources, as discussed in the Plan text, when not otherwise classified as Timberland (T), Cropland (A-C), or Grazing (A-G) shall be classified on the General Plan maps as Natural Resources Protection-Habitat (N-H).

In all areas designated N-H, except the Day Bench area, residential units may be permitted at a density of one dwelling unit per the acreage indicated on the land use map. If a project proponent agrees to cluster residential units, up to a 100 percent density bonus may be permitted if the parcels are clustered to the degree necessary to reduce the negative impacts on wildlife habitat to a level that does not exceed the level that would be created by the non-clustering option discussed above. When the clustering option is utilized, the clustered parcels shall be sited to reduce the impacts on critical habitat elements such as wildlife watering sites, mineral springs, key thermal cover areas, roost sites and nest concentrations. The balance of the land shall remain in open space. Modifications to the open space areas shall only be allowed for habitat enhancement and forest management.

In the Day Bench area, designated NH-RB-C, the wildlife habitat is the primary designation, but the RB combining designation also recognizes that rural residential development may be permitted at a maximum density of one dwelling per 5 acres, as long as the residences are clustered. The Clustering (C) designation requires clustering. The residential clustering, along with other habitat protection criteria, is required to the degree necessary to mitigate the impacts to below a level of significance that development may have on the habitat.

Recreation uses may also be conditionally permitted when identified significant adverse impacts on the habitat resource are mitigated.

FW-b Recognition that classification of some fish, wildlife, and vegetation resources designated and used as Timberlands, Croplands or Grazing Lands does, in most cases, protect habitat resources. However, if there is a conflict, the timber or agricultural land use classifications mentioned above shall prevail.

FW-c Projects that contain or may impact rare and/or endangered plant or animal species, as officially designated by the California Fish and Game Commission, shall be designed or conditioned to avoid significant adverse impacts on those species.

FW-d The significant river and creekside corridors of Shasta County shall be designated on the General Plan maps, except in those areas designated as full time agricultural, timberland and significant habitat areas. The primary purpose of this designation is to protect the riparian habitats from development. The purpose is also to encourage open space and recreation (policy OSR-e). Riparian habitat protection along the significant river and creekside corridors, as designated on the plan maps shall be achieved, where appropriate, by the following measures:

- regulation of vegetation removal
- design of grading and road construction
- establishment of a development set-back
- the siting of structures, including clustering.

FW-e Salmon spawning gravel in the following rivers and creeks shall be protected:

Sacramento River: Keswick Dam to Shasta-Tehama County line.

Battle Creek: Mouth to the mouth of South Fork Battle Creek.

Cow Creek: Mouth to:

Powerhouse on South Cow Creek; the mouth of Coal Gulch on Old Cow Creek; the mouth of Dry Clover Creek on Clover Creek; the mouth of Tracy Creek on Oak Run Creek; the mouth of Salt Creek on Little Cow Creek.

Cottonwood Creek: Mouth to west line of Section 6, T.29N., R.5W., M.D.B.& M.

Bear Creek: Mouth to the Highway 44 bridge.

Clear Creek: Mouth to McCormick-Saeltzer Dam.

SCENIC HIGHWAYS

INTRODUCTION

The Scenic Highways element is an optional general plan element authorized by Section 65303 of the Government Code. The scenic highway element is intended to establish and protect highways with scenic value, be they State or County roads.

Definitions

The term "scenic highways," as used in this element, refers to any freeway, highway, road, street, boulevard or other vehicular right-of-way which traverses an area of unusual scenic quality as indicated on Figure SH-1. An "official scenic highway" is a scenic highway which has been designated by the County Board of Supervisors and/or the State of California, according to a procedure which is discussed below.

The visible land area outside the actual right-of-way is generally described as the "viewshed" or the "scenic corridor." The corridor encompasses the land easily visible from the highway. Depending on topography and air quality, the physical dimensions of the corridor may vary considerably.

It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.
- Gateways - locations which mark the entrance to a community or geographic area.

FINDINGS

Because Shasta County contains two major river valleys, the Sacramento and the Fall, and three major mountain ranges, the Coast, Klamath, and Cascade, its scenic resources are both varied and remarkable. Virtually every highway in Shasta County is a scenic highway. However, some scenic highways are more important than others based on the visual quality of their scenic corridors, the degree to which highways are used, and vulnerability of corridors to degradation of visual quality.

Value of Scenic Corridors

Scenic corridors make major contributions to the quality of life enjoyed by the residents of Shasta County. The development of community pride, the enhancement of property values, and the protection of aesthetically pleasing open spaces reflecting a preference for the rural lifestyle are all ways in which scenic corridors are valuable to County residents.

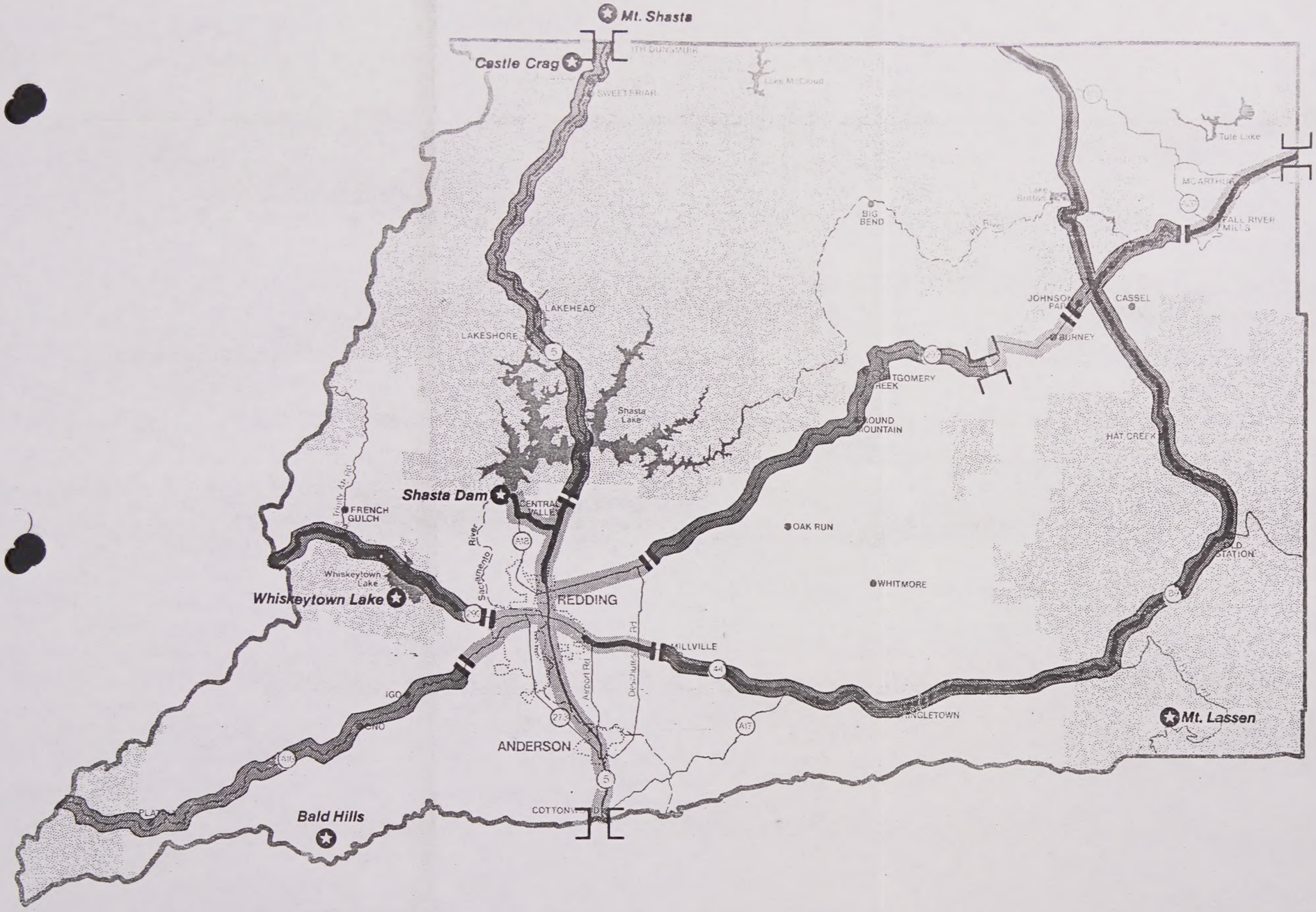


FIGURE SH-1
Scenic Highways

- Corridor in which natural environment is dominant
- Corridor in which natural and man-made environment contrast
- Focal point
- Gateway
- Transition
- State routes eligible for official scenic highway designation

General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

SEDWAY/COOKE, Urban and Environmental Planners and Designers

This map shows generalized data. Detailed maps are on file with the Shasta County Planning Department.

0 5 10 miles

Scenic highways and their associated corridors also strengthen the tourist industry of Shasta County. For many visitors, highway corridors will provide their only experience of Shasta County. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist related activities of the County's economy.

Scenic Corridor Issues

In order to ensure present and future protection of the County's scenic environment, unsightly land uses which impair the visual quality of official scenic highways should be controlled. Undesirable land uses might include construction of large buildings or facilities or the siting of billboards or other off-premise signs. Both of these actions tend to conflict with the surrounding natural environment and restrict views of distant features such as mountains and lakes.

Shasta County is fortunate in that current land uses along its scenic highways rarely conflict with the visual quality of associated corridors. This is largely due to the fact that current preferences for the rural lifestyle in many areas of the County have resulted in a development pattern which for the most part respects natural features and landscapes.

Future impacts of development on visual resources along official scenic highways will depend primarily upon decisions regarding the type, design and siting of future land uses. While a dramatic increase in development pressure along scenic highways is not anticipated, the General Plan should nevertheless provide for the continued protection and enhancement of official scenic highways.

A major objective in planning for the protection and enhancement of scenic highways should be the achievement of a balance between different users of scenic corridors. While scenic highways and their associated viewsheds offer visual amenities for those who travel there, the value and importance of scenic corridors for those who live and work along them extends beyond visual significance.

Prime examples of potentially conflicting interests are the motorist and the resource manager (timberland owner or agriculturalist). Many resource management activities, such as clear cutting on timberlands or brush burning for grazing land improvement purposes, create adverse visual impacts along scenic highways. Considering the "life" of a scenic highway, however, these impacts are minimal; clear cut areas are reseeded and blackened fields quickly return to their natural states. Natural resource management activities such as timbering and agriculture are uses which contribute to the long-term beauty of a scenic corridor and should not be precluded along scenic highways based on short-term adverse impacts.

Approaches to Protecting Scenic Corridors

There are two approaches to the protection and enhancement of scenic highways:

County Level

The primary mechanism available for scenic highways protection at the County level is the land use plan, that section of the General Plan which guides commercial, residential, and industrial land uses and densities. In order to be an effective tool in official scenic highway and corridor preservation, the land use plan should reflect a balance between resource protection and community desires.

Additional means by which the visual quality of official scenic highways are preserved are by administrative guidelines regarding the siting and design of new structures within scenic corridors. These guidelines would be used to direct new development in such a way as to maximize harmony with scenic resources and minimize negative impacts on a corridor's visual quality.

State Level

In 1963, the California State Legislature established the California Scenic Highway Program (SB 1467) in recognition of the desirability of preserving scenic corridors for the enjoyment of future generations. Passage of this bill gave the State of California Department of Transportation (CALTRANS) the responsibilities of administering and coordinating a scenic highways program and of officially designating state and county highways as scenic highways. "Official" status is granted after completion of: 1) a scenic highways element of the local general plan; 2) a corridor survey and highway facilities study (prepared by the State if on a state highway and by the County if on a county highway); and 3) a specific plan and program designed to protect and enhance the scenic corridor (to be prepared by the local government having jurisdiction over lands adjacent to an eligible scenic highway). The specific plan and program guidelines require that the protection program take:

> . . . such action as may be necessary to protect the scenic appearance of the scenic corridor, the band of land generally adjacent to the highway right-of-way, including but not limited to 1) regulation of land use and intensity (density) of development; 2) detailed land and site planning; 3) control of outdoor advertising; 4) careful attention to, and control of earthmoving and landscaping; and 5) the design and appearance of structures and equipment." (Streets and Highways Code, Chapter 2, Article 2.5, Section 261.)

If the local jurisdiction's program is satisfactory, the CALTRANS Director will designate the highway as an official scenic highway. The highway will then be identified by state scenic route signs ("poppy" signs) and included on State maps distributed throughout California. In September, 1981, the portion of Shasta Dam Boulevard west of Lake Boulevard received official state designation as a scenic highway.

The General Plan Approach

The appropriate approach for official scenic highway corridor protection in Shasta County should incorporate State and County level protection measures. The amount of protection should be tailored to balance the need for scenic corridor protection, based on resource value, with the County's demand for corridor preservation.

As all routes vary in terms of viewshed quality and protection needs, it would be impractical to develop a County land use plan and policies which address all existing situations. Therefore, at the County level, administrative guidelines should be developed which would direct new development in such a way as to minimize land use conflicts while maximizing potential scenic value along the corridor. The administrative guidelines system should be general enough to apply to any combination of land use and resource characteristic, yet specific enough to provide the degree of protection necessary and desirable for preservation of the scenic corridor. Guidelines should regulate new development along official scenic corridors in terms of allowable land uses and densities, development siting, structural design and landscaping. Outdoor advertising guide lines, both on and off-premise should also be developed and applied where necessary for scenic corridor protection.

Requests to the State Department of Transportation for official designation of state scenic highways should be submitted when necessary and desired by the County.

OBJECTIVES

SH-1 Protection of the natural scenery along the official scenic highways of Shasta County from new development which would diminish the aesthetic value of the scenic corridor.

SH-2 New development along scenic corridors of the official scenic highways should be designed to relate to the dominant character of the corridor (natural or natural and man-made contrast) or of a particular segment of the corridor. Relationships shall be achieved in part through regulations concerning building form, site location, and density of new development.

SH-3 Recognition that the management practices of agriculture, timber and other resource-based industries, which may cause degradation of the visual quality of the scenic corridor, are necessary and their impacts temporary.

POLICIES

SH-a To protect the value of the natural and scenic character of the official scenic highway corridors and the County gateways dominated by the natural environment, the following provisions, along with the County development standards, shall govern new development:

- setback requirements
- regulations of building form, material and color

- landscaping with native vegetation
- siting of new structures to minimize visual impacts from highway.
- Utility lines shall be underground wherever possible. Where undergrounding is not practical, lines should be sited in a manner which minimizes their visual intrusion.

SH-b The type, size, design and placement of signs within an official corridor shall be compatible with the visual character of the immediate surroundings. The County's sign regulations should be redrafted for the following situations:

- timberlands and forest areas
- croplands and grazinglands
- rural community centers
- urban and town centers
- recreational uses

SH-c Official scenic highways should include vista sites, turnouts, restrooms, picnic grounds, travel information and other related facilities/services.

INTRODUCTION

The open space element is the broadest in scope, except for the land use element, in the General Plan. As defined by Government Code Section 65560(b) "open-space" includes any parcel or area of land or water which is essentially unimproved and designated as such for any one of the following reasons:

- natural resource protection (such as fish and wildlife habitats, rivers, streams and riparian corridors);
- managed production of natural resources (including agricultural and timberlands, mineral extraction areas and fish hatcheries);
- provision of outdoor recreation (camping, hiking, boating);
- assurance of public health and safety (open space along flood plains, steep slopes, or any other such area which threatens the safety of structural development).

The objectives of the open space element have been clearly stated by the State Legislature and are included in Government Code Section 65561:

> ". . . (a) That the preservation of open-space land . . . is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of land for the production of food and fiber, for the enjoyment of scenic beauty, for recreation and for the use of natural resources; and
>
> (b) That discouraging premature and unnecessary conversion of open-space land to urban uses is a matter of public interest and will be of benefit to urban dwellers because it will discourage noncontiguous development patterns which unnecessarily increase the cost of community services to community residents . . ."

Government Code Section 65303 outlines an optional recreation element designed to show ". . . a comprehensive system of areas and public sites for recreation, including . . . (1) Natural reservations. (2) Parks. (3) Parkways. (4) Beaches. (5) Playgrounds. (6) Recreational Community Gardens. (7) Other recreation areas."

Because recreational opportunities in Shasta County are so numerous, the General Plan will approach their discussion in three different ways: recreation as it relates to the County tourist industry, recreation at the community level (local parks and playgrounds), and recreation at the Countywide level.

For a discussion of recreation at the community level, the reader is referred to the Public Facilities Element included in the Community Development Group. The Open-Space and Recreation Element deals with recreation at the Countywide level and recreation as it relates to the County tourist industry. The Element includes a discussion of the resources and facilities provided by federal, state, and County governments as well as private interests, which are designed to accommodate users from the entire County.

Although the General Plan Guidelines allow for a separate recreation element, the discussion of Countywide recreational resources in Shasta County has been incorporated into the Open-Space Element to emphasize the relationship between Open-Space land and recreational uses. As defined by state statute and this General Plan, open-space is a passive land use category, meaning that the use and enjoyment of open-space is derived from the natural character of the land rather than from any man-made improvements to it. Recreation on the other hand, is an active use of open-space land. Recreational areas are essentially open-space lands which are designed to accommodate recreational activities such as hiking, picnicking, or camping. The distinction between recreation and open-space is often a cloudy one, as the two uses frequently overlap. For this reason, these two elements have been combined.

FINDINGS

Open Space Resources

As noted in the Economic Development Element of the General Plan, the economy of Shasta County is comprised of three major industries - timber management, tourism, and agriculture - all of which require substantial open space resources, as defined by the Government Code, for their operation. In general terms, these resources may be described as follows:

- timber harvesting
  - public timber lands
  - privately owned timber lands
- tourism
  - federal, state, and county recreation facilities
  - private recreation facilities
- agriculture
  - grazing lands
  - crop lands

Other major open space resources of Shasta County are its rivers and creeks and their associated riparian corridors and floodplains and critical wildlife habitats. The value and importance of these resources cannot be over-emphasized and lies in their potential use for many different purposes, including:

- Riparian and other habitat protection,
- Floodplain management,
- Community design, and
- Recreation.

These multi-purpose uses are particularly valuable in the SCR Planning Area, but the anticipated urbanization of parts of this planning area presents a major threat to these resources. In the other planning areas, development presents far less of a threat to these resources, but their value is no less important. For these reasons, the major rivers and creeks of the County are symbolically designated on the General Plan maps to denote the application of policies specified in this and other Plan elements. With respect to this element, these policies address the scenic value of these resources and their recreation potential.

As provided by the Subdivision Map Act, subdivisions fronting along certain of these rivers and creeks must provide reasonable public access to the waterway and must dedicate a public easement along a portion of the bank of the river or creek lying within the subdivision (Government Code sections 66478.4 and 66478.5). In Shasta County, these rivers and creeks are:

- Sacramento River between Keswick and the Shasta-Tehama County line.

- Battle Creek downstream of the Coleman Powerhouse (Fish and Game Code Section 1505).

An inventory of these open space resources is presented in Table OSR-1.

Given that the composition of the economy of Shasta County will remain unchanged for at least the foreseeable future, the open space needs of County residents will be adequately met in terms of the amount of the resources per population. The central open space issue in Shasta County is the accessibility of these resources to residents of the urbanized portions of the SCR planning area. Within this area are privately-owned, undeveloped open space areas. As this area becomes more developed, a major portion of these close-in open space resources will be developed which will tend to eliminate methods of access other than paved roadway.

One approach to providing better access is the development of a system of hiking, bicycle, and equestrian trails linking the urbanized areas with open space resources. The development of such a system is discussed under Recreation Resources.

Most of the open space resources of Shasta County are federally or state-owned and their management is the responsibility of the appropriate government agency. Open space lands under the jurisdiction of the County are mostly privately owned timber and agricultural lands. Their management for open space purposes will be indirectly accomplished by policies described in the Timber and Agricultural Elements and are primarily intended to maintain the economic value of these resources. Other major open space lands under County jurisdiction include floodplain areas which are subject to policies described in the Flood Protection Element.

TABLE OSR-1

SHASTA COUNTY OPEN SPACE INVENTORY

PUBLIC LAND

Federal

Shasta-Trinity National Forest
Whiskeytown-Shasta-Trinity-National Recreation Area
Lassen National Park
Lassen National Forest
Bureau of Land Management holdings

State

Latour State Forest
McArthur-Burney Falls Memorial State Park
Castle Crags State Park
Ahjumawi Lava Springs State Park
Shasta Historic Park

County

Balls Ferry Park and Fishing Access
Battle Creek Fishing Access
Keswick Lake Fishing Access
French Gulch Park
Hat Creek Park
Lake Britton Fishing Access
Jones Valley Boat Launching Facility
Packers Bay Boat Launching Facility
Redding Island Park and Fishing Access

Regional Serving City Parks

Anderson River Park and Fishing Access (City of Anderson)
Girl Scouts Park (City of Redding)
Lake Redding - Caldwell Memorial Park (City of Redding)
Turtle Bay Regional Park (City of Redding)
Turtle Bay East (City of Redding)

PRIVATE LAND

Privately owned and operated recreational facilities and open-space resources such as resorts, campgounds, recreational vehicle parks, boat and boating equipment rental facilities, geologic tours, hunting and fishing guides, and clubs provided by commercial enterprises. Privately owned open-space also includes timber and agricultural lands, flood-plains, and land designated for Natural Resource Protection.

OTHER

Heritage Resources

Including National Historic Landmarks, State Points of Historic Interest, areas listed in the California Landmark Series and other areas of significant historic, cultural, or geologic value.

The Pacific Crest Trail

Under the auspices of the United States Forest Service, the Pacific Crest Trail provides access into areas of unique and pristine natural character. The trail winds its way along the Pacific Mountain Ranges from the Canada-Washington border, south to the Mexico-California border. The Pacific Crest Trail covers 154 miles in Shasta County, approximately 2/3 of which is on Forest Service land and the remainder on private land.

Quasi-Public land

This category includes campgrounds, man-made lakes, day use areas, and fishing access points provided by PG&E or other local utility districts.

Source: Sedway/Cooke.

Countywide Recreation Resources

Recreation is concerned with the active use of lands and facilities designated for this purpose. Table OSR-1 shows that federal and state agencies and the private sector are major providers of Countywide recreation facilities in Shasta County, and the role of County government has correspondingly been a limited one. A recreation commission appointed by the Board of Supervisors has been in existence since 1961 and has primarily been responsible for making recommendations to the Board on recreation matters.

In 1982 the County closed its Buckeye Landfill Site located to the north of Redding on lands acquired from the Bureau of Land Management, on condition that the County would develop them as a park upon closing. Although the County has no definite plans for the use of this site, it is likely that its ultimate use will be for recreational purposes.

The only new County recreation project currently in the planning stage involves the proposed Cottonwood Creek Reservoir. Subsequent to its construction, the County would have ten years in which to decide whether to sponsor recreation facilities at this U.S. Corps of Engineer owned and operated reservoir. If the County should decide to proceed with the project, the reservoir facility would be operated on a fee basis, possibly through a concessionaire. An important issue concerning this project is the nature of the surrounding land uses. One option would be to allow intensive recreational residential development, while another option would be to limit development such as has been done in the vicinity of Whiskeytown Reservoir.

The proposed enlargement of Shasta Dam would also have recreation implications for County residents. If this project is developed, an as yet undetermined amount of stream-side or riparian habitat area will be inundated and no longer available for use by County residents. One way of mitigating this impact would be to replace the riparian resources lost in this manner with improvements in the habitats along creeks in the SCR planning area. The proposed enlargement project is now entering a new study phase during which it would be to the County's benefit to request exploration of this impact and mitigations.

Trails

In recognition of their different right-of-way surface requirements, trails are divided into two parts: (a) bicycle and (b) hiking and equestrian. In certain sections, the two elements would share the same right of way. Trails offer one means of increasing accessibility to the open space and recreation resources of Shasta County, and trails are themselves a recreational facility. During the planning process, a considerable amount of interest in multi-purpose trails was expressed by the following organizations located in the SCR Planning Area: Palo Cedro Trails Council, Mountain Gate Trail Riders, Shasta Horseman's United Council, Centerville Community Planning Advisory Committee, and Shasta Wonderland Elite Athletic Team. Given this expression of citizen interest and the very limited resources which County government may devote to

recreation development, a practical approach to developing a trail system would be to rely on citizen effort. The organizations listed above could be united under the leadership of the County Recreation Commission to begin the process of developing the trail system.

It must be recognized that this process will be long-term and will require a tremendous amount of citizen involvement to be successful. Where new subdivision development incorporates a link in this system, the County should exercise its authority under Government Code Section 66477 to require the dedication of an easement in the trial right-of-way. In other privately owned areas securing the trail right-of-way would require a variety of techniques, including purchase, lease, or possibly gift. Public funds available for this purpose will be extremely limited, especially at the County level, although the possibility of passing a special tax to support trail system acquisition costs should not be discounted. Fewer problems would be encountered where the trail system utilizes an existing public right-of-way.

Acquisition and development of a trail system is one problem; maintenance of the system is another. Maintenance costs would be especially significant where the trail system would not use an existing public right-of-way. In the absence of support by its citizens, County government will be unable to make the necessary long-term commitment to maintain the system. The burden of securing support for this commitment will again rest with the citizen sponsors of the trails system.

The bicycle trail exclusively uses public roads, as shown in Figure OSR-1. Where possible, it avoids Interstate 5. It is assumed that bicycles would use the paved, vehicular right-of-way. In the event that funding is available, a parallel bicycle path could be constructed along the links of the system experiencing heavy automobile traffic, such as Highway 273. The bicycle trail system is designed to connect all communities in the SCR planning area and to provide north-south, and east-west circulation.

Tourist Related Recreation Resources

Undeveloped open space, or natural areas contained within national recreation areas, national parks, wilderness areas, and state parks represent the major tourist recreation resources of Shasta County and are extremely important to the County's tourist industry. Development of private and public lands within these resources could potentially visually impact the persons using these resources and thus, their enjoyment.

Examples of adverse visual impacts include cases of poorly sited homes or structures which have not been designed to blend with their surrounding landscape. Highly visible roads have been built on scenically sensitive mountain sides to provide access to new homes sites or residential parcels. In still other cases, public agencies have undertaken construction with little sensitivity to the land or the conservation of natural resources.

In order to protect these tourist and recreation resources and their direct contribution to the County's economy, this element contains policies addressing the development of private and public lands within the recreation areas.

National Recreation Area Boundary

Major Bicycle Trail

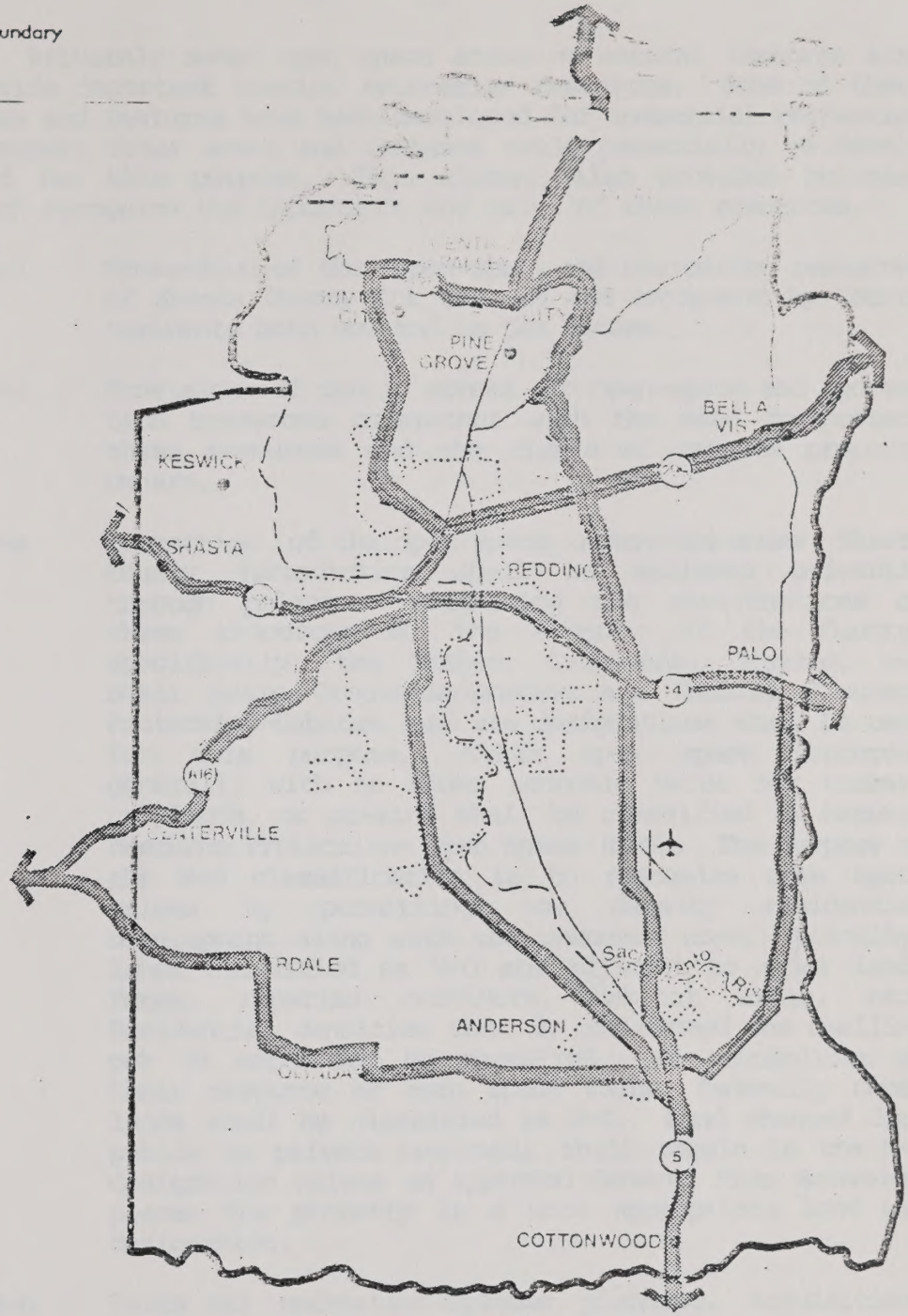


FIGURE OSR-1
Bicycle Trail Policy

South Central Region

General Plan Revision Program: SHASTA COUNTY, CALIFORNIA

SEDWAY/COOKE Urban and Environmental Planners and Designers

0 2 4 miles

Privately owned open space areas or natural features also provide important tourist recreation resources. Some of these areas and features have been developed for commercial recreation purposes; other areas and features could potentially be developed for this purpose. This element also provides policies which recognize the importance and value of these resources.

OBJECTIVES

OSR-1 Protection of the open-space and recreation resources of Shasta County for the use and enjoyment by County residents both now and in the future.

OSR-2 Provision of public access to open-space and recreation resources consistent with the need to protect these resources and the rights of private property owners.

POLICIES

OSR-a Protection of the open space resources under Shasta County jurisdiction shall be achieved primarily through policies recognizing the contributions of these resources to the economy of the County. Specifically, the Timber, Croplands, Grazing, and Small Scale Croplands/Grazing and Natural Resource Protection-Habitat land use designations shall be used for this purpose. Other open space resources generally with no known economic value for timber, croplands, or grazing shall be classified as Natural Resource Protection- Open Space (N-O). The purpose of the N-O classification is to recognize open space values by permitting low density residential development along with the resource uses. Typically, lands classified as N-O are adjacent to major landforms, riparian corridors, habitat areas, etc. Residential densities that do not exceed one dwelling per 20 acres may be permitted. In recognition of their resource or open space value, federally owned lands shall be classified as N-O. Land changed from public to private ownership shall remain in the N-O designation unless an approved General Plan amendment places the property in a more appropriate land use designation.

OSR-b Parks and recreation systems planning, acquisition, development, and operation should be coordinated among city, County, state and federal governments, as well as schools and special districts, and should take advantage of opportunities for linkages between publicly owned parks and publicly owned open-space lands.

OSR-c The quality of the recreation resource values of national recreation areas, national parks, wilderness areas, and state parks shall be protected and maintained by the application of the Natural Resource Protection - Recreation Resource (N-R) land use designation to privately owned lands located within these resources.

When land within a recreation resource area is classified as Timber, Cropland, Grazing, or Mining the N-R classification is not mapped, but is expressed as a policy which overlays these other classifications.

The purpose of the N-R classification is to mitigate any visual impacts which may result from the use of the lands.

If lands so classified are within a rural community center, densities equivalent to Rural Residential A are permitted. Otherwise, residential densities equivalent to Rural Residential B are permitted except for areas that exceed 30% slope the maximum residential density shall be 1 dwelling per 20 acres if within a rural community center and 1 dwelling per 80 acres if not within a rural community center. Residential uses are subject to standards addressing parcel size, siting of structures, removal of natural vegetation, location of access roads, placement of utilities, and other relevant factors designed to mitigate the visual impact of these structures as they are visible by persons using the recreation resources.

OSR-d Existing commercial recreation uses and known potential commercial recreational sites, based on open space and natural features, shall be permitted as shown on the General Plan maps by the symbol R . Other similar commercial recreation facilities, potential or existing, may also be conditionally permitted according to the criteria established in the Community Organization and Development Pattern Element.

OSR-e The significant river and creekside corridors of Shasta County shall be designated on General Plan maps except in those areas designed as A-C, A-G, T or NH. Public access and public easements along the corridors listed below shall be required as provided by the Subdivision Map Act:

- Sacramento River between Keswick and the Shasta-Tehama County line, and
- Battle Creek downstream of the Coleman Powerhouse.

In all other cases, public access and easements for recreation purposes may be provided if:

- Riparian habitat will not be significantly impacted.
- Public access to the corridor is not available within a reasonable distance from the project. Public access includes, but is not limited to, public road access, hiking trails and public land adjacent to the corridor.
- The corridor is located in proximity to urban, town, and rural community centers.

The location and type of public access required shall take into consideration minimizing the likelihood of trespassing across private property and minimizing impacts on private property rights.

HERITAGE RESOURCES

INTRODUCTION

The heritage resources element is an optional general plan element authorized by Section 65303 of the Government Code. This element is intended to identify and protect sites and structures of architectural, historical, archaeological or cultural significance. Due to an abundance of heritage resources located in Shasta County and the interest of County residents in the preservation of these resources, the General Plan includes this optional element.

FINDINGS

Historic Records

Pre-Contact

While much of the County's post-contact history is known, there is still much to be learned of the Native American culture in Shasta County prior to the arrival of non-native settlers. This type of information is obtainable in a variety of ways, yet those methods are most commonly used are ethnography and archaeology.

As was common practice of many ancient peoples, the Native American groups in Shasta County relied on the oral tradition of recordkeeping. Thus, much information on these groups known to us today has been obtained through interviews with tribal elders who are able to describe the lives of their ancestors.

A second means of retrieving ancient history is through archaeology, the scientific study of material remains of human life and activities.

Of these two methods, archaeology presents the greatest implications for land use planning.

Development in areas with known or suspected heritage value may result in damage to or loss of these fragile resources if measures to preserve them are not implemented. It is therefore important that the General Plan be used as a guideline for the protection of these resources for their inherent cultural, scientific, and aesthetic value.

A primary concern expressed by Native Americans relevant to land use planning involves the preservation of ancient villages and burial grounds. This is particularly true for descendents of the Wintu tribes whose now abandoned villages were once located in the Sacramento River Valley. Today this area is experiencing substantial development pressure. In order to satisfy the desire for cultural preservation as well as the needs and demand of future development, representatives of Native American interests, historians, and interested archaeologists should be allowed to monitor the preliminary development of sites which

are known or suspected to contain significant cultural artifacts to determine their significance to cultural heritage. Provisions should also be made whereby valuable artifacts could be professionally excavated and preserved. In addition to villages and burial grounds, such artifacts include stone tool chipping sites, tools, baskets, and weapons. Several large petroglyph (rock art) sites have also been located in the SCR and Eastern Upland Planning Areas.

Post-Contact

Post-contact artifacts consist primarily of settlement areas and structures, cemeteries, and mining sites of the gold rush era. Many of these sites are located in the Sacramento River Valley and the Eastern and Western Upland Planning Areas of the County and are usually accessible to the general public.

Opportunities to preserve post-contact historic resources are available through federal and state government protection. The National Register of Historic Places, the California Landmark Series, and State Points of Historic Interest are all means by which resources may be enhanced and maintained. Several historic sites in Shasta County have already been included in these programs and are listed and described in Table HER-1.

OBJECTIVES

HER-1 Protection of significant prehistoric and historic cultural resources.

POLICIES

HER-a Development projects in areas of known heritage value shall be designed to minimize degradation of these resources. Where conflicts are unavoidable, mitigation measures which reduce such impacts shall be implemented. Possible mitigation measures may include clustering, buffer zones, and building siting requirements.

TABLE HER-1

SHASTA COUNTY HERITAGE RESOURCES[1]

NAME	LOCATION	THEME[2]
Afterthought Mine	Highway 299E	EC/IN
Archaeological Site*	Shasta Trinity National Forest	CULT
Archaeological Site*	Lassen National Forest	CULT
Balls Ferry	Balls Ferry Road	EC/IN
Bass Hill	North of Redding	EX/SE
Battle Rock	Castle Crags State Park	MIL
Bells Bridge	Highway 99, Clear Creek	EX/SE
Benton Tract Site*	Redding	CULT
Briggsville	Clear Creek Road	EC/In
California-Oregon Road	Anderson	EX/SE
Clear Creek	Redding	EC/IN
Cottonwood Historic District*	Cottonwood	ARCH
Cow Creek Petroglyphs*	**	CULT
Dersch Homestead	Anderson	EX/SE
Dersch-Taylor Petroglyphs*	**	CULT
Fall River's First School Site	East of McArthur	SO/ED
Father Rinaldi's Foundation of 1856	Town of Shasta	REL
Fort Crook Site	10 miles NW of Fall River Mills	MIL
Fort Reading Site	Anderson	MIL
French Gulch Historic District	French Gulch	EC/IN
Horse Town	Clear Creek Road	EC/IN
Horseshoe Lake Ranger Station*	Lassen National Park	EX/SE
Igo	Igo	EC/IN
Iron Mountain Mine, Keswick Smelter	NW of Redding	EC/IN
Lake Britton Archaeological District*	**	CULT
Lockhart Ferry	Fall River Mills	EX/SE
Loomis Vistor Center*	Manzanita Lake-Lassen National Forest	SO/ED
McEllroy Military Road Crossing	Highway 299E	EX/SE
Millville	Old 44 Drive	EC/IN
Nobles Pass Route*	Park Highway-Lassen National Park	EX/SE
Old City Hall*	Redding	SO/ED
Olsen Petroglyphs	**	CULT
Park Entrance Station and Residence*	Mineral	EX/SE

NAME	LOCATION	THEME
Piety Hill	East of Igo	EC/IN
Pine Street School*	Redding	SO/ED
Pioneer Baby's Grave	West of Shasta	EX/SE
Prospect Peak Fire Lookout*	Mineral	EX/SE
Reading Adobe*	Cottonwood	EC/IN
Reading's Bar	Clear Creek Road - Igo	EC/IN
Ried Mine in Old Diggins	Summit City	EC/IN
Shasta State Historic Park*	Highway 299, West of Redding	EC/IN
Shasta 47	Sacramento River - Redding	CULT
Shingletown	Highway 44	EC/IN
Southerns Stage Station	Highway 99 - Castella	EC/IN
Squaw Creek Archaeological Site*	**	CULT
Summit Lake Ranger Station*	Mineral	EX/SE
Texas Springs	Texas Springs Road	EC/IN
Tower House District*	Whiskeytown NRA	EC/IN
Volta	Manton	EC/IN
Warner Valley Ranger Station*	Mineral	EX/SE
Whiskeytown	Whiskeytown	EX/SE

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[1]The 51 heritage resources listed here include resources included in the National Register of Historic Places, the California Historical Landmarks series, or the California Points of Interest program. In addition to the resources listed here are approximately 500 known sites or areas of archaeological significance. The names and locations of these areas are not revealed in order to protect these sensitive resources. This information is on file with the Cultural Resources Section of the California Department of Parks and Recreation.

[2]Theme Code:

ARCH	Architecture	EX/SE	Exploration/Settlement
CULT	Cultural (Aboriginal)	MIL	Military
EC/IN	Economic/Industrial	REL	Religion
		SO/ED	Social/Education

*National Register of Historic Places site.
**Information regarding the location of these resources is on file with the Cultural Resources Section of the California Department of Parks and Recreation.

Source: State of California Department of Parks and Recreation

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Community Development Group

Community Development Group



The Community Development Group is comprised of General Plan elements that address the use of Shasta County's physical resources in order to provide communities in which its residents live, work, and play. The individual elements contained in the Community Development Group are:

- Community Organization and Development Pattern
- Economic Development
- Housing
- Circulation
- Public Facilities

These elements are grouped together because they collectively address the development and maintenance of our communities.

The policy options available in this element group are closely influenced and in some areas constrained by elements in the Public Safety and Resources Groups. A major goal of the Plan is to balance and coordinate the sometimes competing objectives contained in the three element groups. Achieving this goal requires some understanding of their interrelationships. Elements contained in the Public Safety Group place limits on the use of the County's physical resources in order to reduce the risks of loss or damage to life and property. Elements contained in the Resources Group describe the opportunities presented by the County's resource base and define the limits within which these resources may be used on a long-term, sustainable basis. Elements in the Community Development Group must respond to risks posed by natural and man-made hazards and to the opportunities presented by the resource base.

Responding to these risks and opportunities in a responsible manner will ensure that both present and future generations of Shasta County residents will be able to enjoy the quality of life which this County offers.

INTRODUCTION

This element establishes policies relating to the organization and relationships of the types of communities present in Shasta County, the types of living environments they offer, and the location of development in relation to these communities in order to maintain and enhance the quality of their environments. This element encompasses most of the subject areas contained within the state mandated land use element, Government Code Section 65302(a), which is quoted in full below. Those subjects within the scope of the Community Organization and Development Pattern Element are underlined. Footnotes refer the reader to those sections of the Plan which address subjects not covered by this element. Government Code Section 65302(a) provides:

> A land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources[1], recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall also identify areas covered by the plan which are subject to flooding[2] and shall be reviewed annually with respect to such areas.

In addition to these mandatory subjects, and as provided by state law (Government Code Section 65303), this element provides for the use of land in order to accommodate projected population and employment that growth within a defined community development pattern that is rationally related to the necessary public services and facilities.

FINDINGS

Prior to presenting findings on development pattern, it is important to define this term as it is used in this discussion. Development means the use of land to accommodate projected population and employment growth in Shasta County. The key term in this definition is the word "use". Development means the actual use of land to provide housing, commercial services, employment opportunities, and public facilities. Development does not mean the parcelization or subdivision of land into lots which may at, some future, date be provided with services and built upon. This distinction is important because the creation of lots does not accommodate growth. Growth is accommodated only by development which creates lots, provides services, and builds the structures and facilities.

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[1] See Resources Group.

[2] See Public Safety Group.

Existing Development Pattern

The future pattern of land use development in Shasta County will in large measure be determined by the existing pattern of land use and the existing organization of communities. Under this pattern major urban development, including the incorporated cities of Anderson and Redding, is concentrated in the Sacramento River Valley along the transportation corridor provided by Interstate 5 and the Southern Pacific Railroad. Located along this corridor to the north of Redding is the unincorporated urban concentration referred to by the Plan as Central Valley, comprising the communities of Central Valley, Pine Grove, Project City, Summit City, and Toyon. South of Anderson along this corridor is the unincorporated community of Cottonwood, which is also characterized by residential and commercial development at urban densities.

Within 5-8 miles to the east and west of this corridor, the development pattern is characterized by rural communities served by community water districts. On either side of the Sacramento River Valley, development in the upland areas takes the form of agriculture, grazing, and timber operations, with small rural community centers and individual homesites dispersed throughout. Many of these communities have their origins in the early settlement of Shasta County. North of Shasta Lake several resort and retirement communities are located along the Sacramento River Canyon.

The above description defines the development pattern of one geographic unit of the County. To the northeast of the Sacramento Valley over the physical boundary provided by Hatchet Mountain Pass lies another geographic unit comprising the Burney Creek, Hat Creek, and Fall River Valleys. This area is traversed by State Highway 299 which runs from the southwest to the northeast. Located along this highway corridor are four unincorporated communities characterized by urban services and urban residential densities. Starting at the southwest corner of this area, they are Burney, Johnson Park, Fall River Mills and McArthur. Outside of these communities, agricultural and timberlands are the predominant land uses. Small rural community centers are located along Hat Creek.

On a Countywide basis, this development pattern accounts for only a modest portion of the County's total land resources that are under private control. As shown by Table CO- 1, approximately 2.8% of the privately owned land area of Shasta County has been developed.

Future Demand for Developable Land

Population projections prepared for Shasta County as part of the General Plan revision program estimate a year 2000 population of between 159,000 and 200,000 persons, compared with a 1980 population of 115,715. As is documented in Appendix A, these population projections encompass a reasonable range of likely population growth during the planning period. Population projections were also used as the basis for projecting employment growth in the County during the planning period. These employment projections are also contained in Appendix A.

TABLE CO-1
SHASTA COUNTY LAND RESOURCES

	Acres	Percent of County Total
SHASTA COUNTY	2,416,440	100
Federal Lands	962,539	40
State Lands	18,990	.7
Privately Owned Lands	1,434,911	59
Incorporated Area	25,559	1.0
- Developed[1]	20,049	.8
- Undeveloped[2]	5,510	.2
Unincorporated Area	1,409,352	58
- Developed[1]	45,500	2
- Undeveloped	1,363,852	56
- Timber Preserve	611,000	
- Agricultural Preserve	141,000	

1. Developed lands does not include agricultural and timber lands.
2. Undeveloped lands in Redding were estimated at 20% of the City's total land area.

Source: Shasta County Office of General Planning, February 1980, and Sedway/Cooke.

TABLE CO-2
LAND REQUIREMENTS FOR RESIDENTIAL
AND EMPLOYMENT PURPOSES - 1982 to 2000

	Acres	Total
RESIDENTIAL		
Sacramento Canyon	560	
Northwest Forest	120	
Big Bend	400	
Northeast Shasta	2,580	
Lassen	0	
Eastern Forest	920	
Eastern Upland	1,560	
South Central Region	16,760	
Western Upland	840	
French Gulch	120	
		23,860
EMPLOYMENT		
Manufacturing	191	
Transportation	217	
Wholesale Trade	140	
Retail	212	
Finance, Insurance, Real Estate	15	
Services	129	
		904
		24,764

Source: Sedway/Cooke

TABLE CO-3
DEVELOPABLE LAND SUPPLY BY PLANNING AREA (ACRES)

Planning Area	VH	H	MOD	LOW
SCUR	4,000	4,000	50,500	94,200
North East Shasta	600	1,400	9,200	227,300
Lassen	0	0	0	24,000
Big Bend	0	0	0	181,900
Eastern Forest	0	0	500	160,400
Northwestern Forest	0	0	0	99,400
Sacramento Canyon	0	0	800	118,200
French Gulch	0	0	1,800	54,800
Western Upland	0	0	8,100	165,200
Eastern Upland	0	0	13,900	238,100

Legend: VH - Very High
H - High
MOD- Moderate
LOW- Low

TABLE CO-4
VACANT RESIDENTIAL LOT INVENTORY IN SHASTA COUNTY

Planning Area	Number of Lots
Sacramento	390
Northwest Forest	223
Big Bend	372
North East Shasta	977
Lassen	154
Eastern Forest	1,556
Eastern Upland	2,444
South Central Region	13,200
Western Upland	831
French Gulch	692
Total	20,839

Source: Shasta County Assessor and Sedway/Cooke.

Estimates of the future demand for land to accommodate the projected employment and population growth were developed by converting these projections into acres of land. Following accepted planning practices, acreage requirements were developed using only the high employment and population projections. These requirements are presented in Table CO-2. It is important to understand that these requirements are for acres of land in addition to existing developed acres of land. These acreage requirements do not reflect existing zoning of undeveloped lands which will require modification in some instances. On the plan maps, there actually has been enough land made available to serve the next 20 to 40 years of growth.

Developable Land Supply

The relative development suitability of undeveloped, privately owned lands in Shasta County was analyzed and the results of this analysis are contained in the Development Suitability Study contained in the Background Reports in the Plan. As is shown by Table CO-3, the developable land supply is more than adequate to accommodate the population growth and its concurrent residential and employment land use requirements as projected for the next 20 years. However, as is also shown by Table CO-3, the supply of developable lands, especially the lands of higher suitability, is not uniformly distributed throughout the County. Two planning areas, SCR and North East Shasta, contain 100% of those lands classified as very high or highly suitable for development.

A contrast of land supply according to development suitability with the supply of vacant residential lots is useful. The distribution of these lots by County planning area is shown in Table CO-4. The parcelization pattern represented by these lots is a situation which the General Plan must recognize, despite the fact that the development suitability of some unknown portion of these lots is low. Low development suitability is directly translatable into higher public and private costs to use these lots for development purposes. This situation emphasizes the fact that future land divisions must conform to a development pattern based on development suitability in order to make development less costly.

General Plan Development Pattern

The development pattern of the General Plan is designed to accommodate a total County population of 200,000 persons, the population projected to be reached by the year 2000. This is accomplished by physically placing the acreage requirements of Table CO-2 onto County lands. In relating this Plan pattern to the existing development pattern in the SCR planning area, it was necessary to look beyond the 20 year planning period and its acreage requirements in order to lay out a coherent development plan. The General Plan development pattern will accommodate at least the growth anticipated during the planning period, and in fact more lands are designated for development than will actually be required during the 20 year planning period.

The General Plan development pattern is quantitatively expressed in Tables 11 and 12 of the Population, Housing and Employment projections in Appendix A. Table 11 shows the distribution of growth in population, new housing units, and acres of land required by these new units among the 10 planning areas. Table 12 shows the distribution of growth within each planning area. These tables categorize dwelling units according to the General Plan land use designations of Urban, Suburban, and Rural Residential, all of which relate to density and housing type as described in Table CO-6. The following factors were used to convert dwelling units to acres of land:

- Urban - 4.5 D.U.'s/acre
- Suburban - 1.5 D.U.'s/acre
- Rural Residential A - 1 D.U./4 acres
- Rural Residential B - 1 D.U./10 acres

The development pattern responds to growth on a Countywide basis and includes both incorporated and unincorporated areas. A certain portion of the 78,000 population growth projected for the SCR planning area for the period 1980-2000 will be accommodated or "in-filled" within the incorporated limits of Anderson and Redding.

The General Plan development pattern is based on a projected population of 200,000 by the year 2000. It is entirely possible that the growth Shasta County will actually experience during the next two decades may either fall short of or exceed this projection. This population projection, and its accompanying acreage requirements for housing and employment, will be revised in response to real world events, rather than left as a fixed, inflexible limit mechanically applied without regard to changing conditions. It follows that the Community Development Element must contain policies requiring both the periodic review of these projections to measure their conformance with actual growth and, based on this review, the revision of these projections in a manner consistent with the objectives of the General Plan. The periodic revision of the growth projections should maintain a supply of land capable of accommodating at least the growth anticipated for the twenty year period commencing with the date of revision.

Development Pattern, Service Provision, and Interjurisdictional Coordination

The orderly and cost-effective implementation of the development pattern described above requires appropriate levels of basic services by the agencies best able to do so by virtue of their scale of operations, legal authority, financial resources, and long-term plans. As discussed in this section, basic services include water, wastewater treatment, roads, fire protection, and law enforcement.

The task of relating the development pattern to basic service provision will be most complex in the SCR planning area. This complexity exists for two reasons. One, this area will experience a substantial portion of the growth anticipated during the planning period. Two, within this planning area are many

different types of service providers. Each service provider differs in its ability to provide basic services. Some service providers address only single services, such as water supply or fire protection. At the other end of the scale, the cities of Anderson and Redding provide all of the basic services, plus many additional urban services. In between the single and the comprehensive service providers are Shasta County and the Shasta Dam Area Public Utilities District. The County provides some basic services, such as roads, fire protection and law enforcement, but not others. Shasta Dam Area PUD provides water supply, wastewater treatment, power, and recreation services, but does not provide roads, fire protection or law enforcement.

The cities of Anderson and Redding are best suited for providing the services required by urban and suburban development. This conclusion is borne out by the practical experience of the County in providing services to the unincorporated urban communities. The services provided by County government generally have been supplemented by those provided by limited purpose governments or special districts.

While the combined abilities of County governments and special districts anywhere in California to provide urban services has always been limited, these abilities have been further impaired by the adoption of Articles XIIIA (Proposition 13) and XIIIB (Proposition 4) of the Constitution and the constraints they place on revenue collection and spending. On balance, a general purpose government agency receiving revenues from a variety of sources, in short a city, is the best vehicle for delivering urban services.

This conclusion suggests that future urban and suburban development provided by the General Plan development pattern and located contiguous to Anderson and Redding should receive their services from these cities. The key issue in this proposition is that of timing development with the ability to provide services.

The practice to date has been to allow urbanization and suburbanization to occur in unincorporated areas, based on development standards not necessarily designed for the efficient provision of urban services. Subsequent annexations by a city and the installation of urban services has been more costly than would have been the case had urban development standards been originally imposed.

A solution to this problem would be for the County to require adherence to urban development standards so that additional costs could be avoided upon annexation.

A general plan must include all territory within the boundaries of the adopting city or county and any land outside its boundaries which bears relation to its planning (GC 65300). With regard to a city, its planning area should extend beyond its incorporated limits to include unincorporated areas whose use and development will affect the city's plan. When a city exercises the authority to prezone unincorporated territory in anticipation of annexation (GC 65859), it must do so in conformance with a general plan for the prezoned area (GC 65860).

A county's general plan must cover incorporated as well as unincorporated territory. Since counties do not exercise land regulatory authority over incorporated areas, planning for them is in the nature of providing a countywide framework for the growth and development of incorporated areas (State of California, General Plan Guidelines).

Special districts providing public facilities essential to the growth and maintenance of an urban population are authorized to prepare five-year capital improvement programs indicating the location, size, timing, and other aspects of proposed improvements. The planning area for such a program could include incorporated as well as unincorporated areas. Although the law is silent on this point, the planning area could extend beyond the boundaries of the special district's service area. While the provision of capital improvements exerts a strong influence on land use decisions, it is important to note that special districts are not empowered to exercise land use planning or regulatory authority.

The state planning and zoning law does not explicitly provide any mechanism for determining the planning area boundaries of cities, counties, and special districts. The Knox-Nisbet Act governing local agency formation commission (LAFCO's) does however, provide for the designation of sphere of influence areas which may function as planning areas. The LAFCO established by state law in each county must define for each city and special district within the county a plan for its "probable ultimate physical boundaries and service area" (GC 54774).

In the case of a special district, its planning area and sphere of influence should probably be coterminous. Given its much broader functions and authority in land use planning and regulation, the planning area of a city should include at least its sphere of influence and extend beyond to include areas in which it has a legitimate planning interest.

The state planning and zoning law clearly recognizes that the planning areas of cities, counties, and special districts will overlap to define areas of mutual concern. Accordingly, state law outlines the nature of the planning interaction among these agencies.

General plans or elements thereof proposed for adoption by cities should be referred to the county in which they are located for review and comment, and the county should do likewise for cities within its boundary (GC 65305, 65306). Upon adoption of a plan or constituent elements by cities and county as described, copies of the adopted plan should be exchanged and may be adopted by the receiving entity as part of its general plan (GC 65360). Five-year capital improvements programs prepared by a special district must be referred for review to cities and counties within which the district operates (GC 65403(c)). The purpose of this review is to solicit comments regarding consistency with the applicable general plan.

State planning law also provides for the coordinated implementation of general plans through the construction of public works projects. Counties and cities may require school and special districts operating wholly or partially within their jurisdictions to submit lists of public works projects proposed for planning or construction during the ensuing fiscal year. These lists will be reviewed by the receiving agency and integrated into a coordinated public works program which shall be evaluated for conformity with the applicable general plan (GC 645401). Cities, counties, and special districts may not undertake a public works project, including the acquisition and disposal of land, within unincorporated and incorporated territory until the project's consistency with the applicable general plan has been determined (GC 65402 (b,c)).

Interjurisdictional planning relationships are illustrated in Figure CO-1. Areas II and III of this figure show where urban development standards are needed so that added costs can be avoided upon annexation. Area V illustrates a situation where a special district will provide a service to an area which will ultimately be urbanized and annexed by a city. One option would be to de-annex this area from the service area of the special district and incorporate it within the city. Another option, which is shown in Figure CO-1, is for the special district to continue to provide its service to the area subsequent to annexation. In either case, joint city-county-special district planning is required to facilitate orderly and cost effective provision of urban services.

Conversion of Residential Land Use Designations into Zoning Districts

The General Plan uses four residential land use designations - Urban, Suburban, Rural Residential A, and Rural Residential B. These designations relate to dwelling unit density and are more completely described in Table CO-6. The maximum densities for these designations are:

- Urban - 16 dwellings/acre
- Suburban - 3 dwellings/acre
- Rural Residential A_1 - 1 dwelling/2 acres
- Rural Residential B[1] - 1 dwelling/5 acres

Before proceeding, it is important to understand the reasons for the larger lot density range given to Rural Residential B. This is designed to focus growth in rural community centers by decreasing population densities in rural areas outside them. Decreasing population densities in these outlying rural areas has the effect of reducing conflicts between residential and the agricultural uses generally found in these areas. It also has the effect of reducing demands in these outlying areas for services, such as fire protection, law enforcement, road construction and maintenance, school bus service, and retail commercial, and shifting these service demands to rural community centers where they can be more efficiently satisfied.

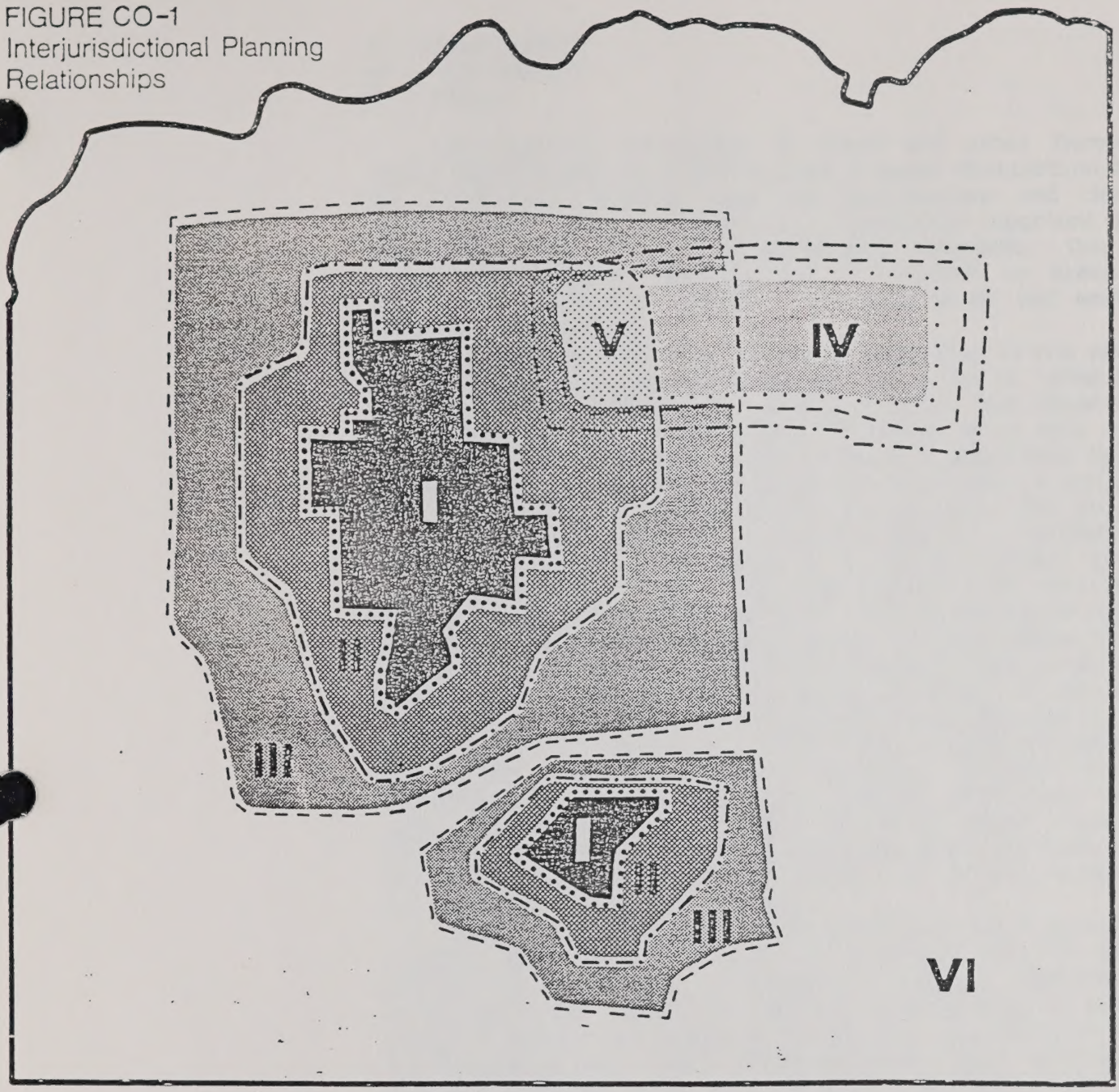
Each residential land use designation will provide a relatively broad density range when converted into a more finely-grained series of zoning districts, each with its own parcel size requirements. Apart from the existing land use/parcelization pattern, certain critical factors need to be evaluated in converting land use designations into zoning districts. They are:

- Water Supply
- Wastewater Treatment

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[1]Must be within one mile driving distance of a paved road to achieve maximum density. If farther than one mile, the maximum density is 1 dwelling unit per 10 acres.

FIGURE CO-1
Interjurisdictional Planning Relationships



County Boundary
Sphere of Influence
Planning Area
City Limits
Service Area

AREA	INCORPORATED	UNINCORPORATED	POTENTIAL ANNEXATIONS YES	POTENTIAL ANNEXATIONS NO	SERVICE PROVIDER CITY	SERVICE PROVIDER COUNTY	SERVICE PROVIDER SPECIAL DISTRICT	LAND USE PLANNING AND REGULATION CITY	LAND USE PLANNING AND REGULATION COUNTY
I	■		N/A		■			■	
II		■	■			■		■	■
III		■		■		■		■	■
IV		■		■		■	■		■
V		■	■			■	■	■	■
VI		■		■		■			■

- Road Access
- Fire Hazard
- Slope.

Site-specific knowledge of these and other factors and their implications for density draw a major distinction between the Urban and Suburban land use designations and the Rural Residential A and B designations. Especially important in this regard are water supply and wastewater treatment. Use of the urban and suburban designations is limited to areas where service by community systems, including water and wastewater treatment is assumed.

In contrast, the same degree of knowledge is not available in areas designated as Rural Residential A and B. Some Rural A areas will be provided with community water, but other Rural A areas and most Rural B areas will be served by on site systems. Likewise, a very limited number of Rural A areas will be served by community wastewater treatment, but most Rural A and all Rural B areas will be served by on-site systems. The ability of parcels of land classified as Rural A and B to accommodate on-site water supply and wastewater treatment systems is highly variable throughout the County and dependent on site specific conditions requiring field surveys. In the absence of this site specific information, the application to these lands of zoning districts with specific parcel size requirements is problematic and somewhat arbitrary. The very likely result is the creation of situations where parcel sizes bear little relation to on-site conditions. It is just as likely that a required parcel size may be too large as it may be too small relative to on-site conditions. In the former case, greater efficiency could be achieved through more intensive use of the land, while in the latter case property owner expectations could be frustrated by the failure of the parcel to accommodate on-site water supply and wastewater treatment systems.

Lands classified as Rural Residential A and B should not be assigned specific parcel sizes or densities prior to review of detailed site-specific information. Instead, specific parcel size requirements should be applied to Rural A and B lands only after collection and analysis of the site specific data required to accurately make these determinations. Under this approach, commonly referred to as land capability analysis, site specific information necessary to develop zoning parcel size limitations is provided by the property owner.

To a certain degree, the land capability analysis approach is currently being used in the application of the County's on-site wastewater treatment standards. Here a preliminary determination of septic tank suitability and resulting density is made prior to submitting a formal development application. Land capability analysis, as established in policies contained in this element, would be expanded to include other factors requiring some degree of on-site investigation prior to establishing zoning parcel sizes. These factors, the applicable criteria used in determining density or parcel sizes, and an administrative mechanism would be contained in the zoning ordinance. The following discussion identifies these factors and generally discusses their density criteria. Specific

criteria would be developed as part of the revision of the zoning ordinance and included in some type of capability analysis matrix. A model for this matrix is shown in Figure CO-2. The point values shown in this figure are hypothetical and provided for illustrative purposes only.

As noted above, water supply is a critical factor. The maximum density in Rural Residential A is one dwelling unit (D.U.) per 2 acres; where a proven reliable water supply is available, 2 acre parcel sizes would be permissable. Parcel sizes would continue to increase with the difficulty in obtaining water onsite, again as documented by field testing. The same approach would be used for Rural Residential B.

Wastewater treatment would be handled in a similar manner. Parcel sizes would be established according to on-site conditions as documented by field test. Areas where soils present the least constraints for on-site systems would have smaller parcel sizes compared to areas where significant constraints exist.

After water supply and wastewater treatment, road access is the most critical factor in determining the development density in rural areas. Parcels directly accessible or within a specified distance of a County maintained road may be permitted smaller parcel sizes. For example, the RB designation permits a density of 1 dwelling unit per 5 acres if within a mile of a paved road. If not, the maximum permitted density is 1 dwelling unit per 10 acres.

Fire hazard would relate to parcel sizes in two ways--hazard classification as established by the California Department of Forestry and response time as determined by the Fire Protection Agency exercising jurisdiction. Areas with lower hazard classifications and shorter response times could allow smaller parcel sizes than areas with higher hazard classifications and longer response times.

Slope would address topography and underlying geology as they relate to erosion potential and slope stability. Smaller parcels would be permitted on lands with lower erosion potential and greater stability; larger parcels would be required in high erosion potential, unstable areas.

The land capability analysis would differ from the conventional approach to zoning in the following ways. One, conventional zoning assigns parcel sizes to rural lands based on generalized information, whereas land capability analysis would be based on site-specific data. Two, while conventional zoning establishes parcel sizes and density requirements in advance of the actual development of land, land capability analysis would usually come into play only when a development proposal is pending. While there would be absolutely no restrictions preventing a property owner from selling or otherwise disposing of his/her land prior to its evaluation under land capability analysis, in many situations it would be advantageous for a property owner contemplating the sale or transfer of his/ her land to know the applicable parcel size requirements. This could be accomplished upon submission of the data required to make this determination. Finally, the burden of providing the on-site data required for land capability analysis would rest with the property owner.

FIGURE CO-2: HYPOTHETICAL LAND CAPABILITY ANALYSIS MATRIX
(Actual Matrix to be Placed in the Zoning Ordinance)

Analysis Factors	Point Range Based on Criteria	Factor Weight	Points	Weighted Points
• Water Supply	(1-10)	3	10	30
• Wastewater Treatment	(1-10)	3	2	6
• Road Access	(1-5)	2	3	6
• Fire Hazard	(1-3)	1	1	1
• Slope	(1-3)	1	2	2
GRAND TOTAL				45

Land Capability Points	Average Parcel Size Rural A	Rural B
0-10	20 acres	80 acres
11-20	15 acres	70 acres
21-30	10 acres	60 acres
31-40	5 acres	50 acres
41+	2 acres	40 acres

Note: All point values are illustrative.

Source: Sedway/Cooke

Recognizing that land capability analysis represents a departure from past practice, policies contained in this element exempt pre-existing legal lots from its application. Such lots would be permitted to develop at a density of at least one dwelling unit per lot, provided that applicable development standards are satisfied.

It is also important to note that once land capability analysis has operated to determine parcel or lot size requirements, lot size averaging, as illustrated in Part One in Figure PRE-5, could be used to create parcels of varying sizes.

In Urban and Suburban areas, residential densities will vary provided that the density is within the appropriate range and that adequate services, such as community sewer and water service, are available. The actual lot sizes and density of development will be determined through zoning utilizing site design concepts, circulation systems and land use compatibility criteria. Lot size averaging is also appropriate in these areas.

Conversion of Commercial and Industrial Land Use Designations into Zone Districts

The General Plan maps have only one commercial and one industrial land use designation. They are usually applied to the urban and town centers. These designations are designed to establish broad commercial and industrial land use categories which will be converted into more detailed zone districts. In addition, there is a Mixed Use (MU) designation that is applied to the rural commercial-light industrial areas.

The Commercial (C) land use designation represents a range of commercial activities. When applied to the Plan maps, this designation identifies the general locations most suitable for commercial activities, but does not contain the level of detail needed to identify the range of commercial uses most appropriate for a specific location. Zoning and/or specific plans will include a series of zone districts. This includes approximately seven commercial zone districts, as outlined in Table CO-7. Some of these commercial districts may also be applied outside of the Plan's commercially designated areas as described in the table.

The Industrial (I) designation will operate similar to the Commercial designation , although there will be only two or three industrial zone districts, as outlined in Table CO-8.

Planned Developments

Planned developments often provide a more unified and potentially more desirable and attractive development in an area.

Planned developments involve comprehensive site planning that can often provide a mix of uses that could otherwise create land use conflicts between neighboring uses. A unified site design for a residential planned development may offer a variety of housing types, including clustered housing, both attached and detached, with common open spaces. While planned developments are commonly used for residential projects, they may also be applied to other types of land uses such as commercial, industrial and office parks. Often it may contain a mix of any or

all of these uses. A planned development shall be at a scale where high design standards along with other amenities can be provided.

The types of quality developments described above can offer a better lifestyle , shopping and working environment to Shasta County residents. Because of this, the County should provide incentives for those wishing to provide projects that meet this criteria.

Relationship of Public Regulation to Privately Owned Land

Public regulation allows for the explicit expression of community values and provides a mechanism for identifying and sharing the costs of development. In turn, the exercise of private property rights provides the motivation and resources without which no development would occur.

Both public regulation and the exercise of private property rights must work in concert if the development pattern provided by the General Plan is to be realized. Each has an important contribution to make to the planning process and the General Plan should allow these roles to be exercised.

OBJECTIVES

CO-1 To promote a development pattern which will accommodate, consistent with the other objectives of the Plan, the growth which will be experienced by Shasta County during the planning period (1983-2000), as such period is extended by future revisions of the Plan.

CO-2 To guide development in a pattern that will provide opportunities for present and future county residents to enjoy the variety of living environments which currently exist within the county, including:

- Incorporated communities served by the full range of urban services.
- Unincorporated communities served by most but not all urban services.
- Unincorporated rural communities provided with very limited or no urban services.
- Rural homesites located outside of community centers on relatively large lots or in clustered development accompanied by open space areas within the project provided that the clustering does not create an adverse impact on neighboring properties.

CO-3 To guide development in a pattern that will respect the natural resource values of County lands and their contributions to the County's economic base.

CO-4 To guide development in a pattern that will minimize land use conflicts between adjacent land users.

CO-5 To guide development in a pattern that will establish an acceptable balance between public facility and service costs and public revenues derived from new development.

CO-6 To fashion a development pattern whose implementation mechanisms such as zoning, subdivision, and other regulations, explicitly define a relationship between public and private expectations and responsibilities concerning land use that is based on the following principles:

- Public programs shall recognize both the expectations of individual property owners to be able to use their lands as they desire, and the responsibility of government to provide a regulatory climate which does not impede reasonable private expectations.

- Property owners shall recognize public programs emphasizing that land be used in a responsible manner that does not adversely affect either adjacent property owners or the community values of the citizens of Shasta County.

- A workable relationship between public and private land use expectations must be achieved in order for each to be well served.

- Periodic review of the relationship between public and private land use expectations is necessary to reflect changing community values.

CO-7 To recognize that the major economic resources for achieving the development pattern will come from the private sector, rather than government, and that the General Plan, as the expression of community values, will guide the use of these resources.

POLICIES

CO-a The County shall, in coordination with the Cities of Anderson and Redding, ensure the availability within the County of an inventory of developable lands sufficient to accommodate growth projected for the planning period.

CO-b The County shall monitor, on a yearly basis, the rate at which the developable land inventory is being consumed, the population and employment growth of the County, and other useful indicators of the County growth.

CO-c In 1985 and thereafter at least every five years, as part of a comprehensive General Plan review, the County shall examine the results of the monitoring process for the previous period. By amendment of this Plan appropriate adjustments shall be made in the inventory of developable land so that it will accommodate the growth projected for the subsequent 20 year period. The intent of this policy is that the developable land inventory shall never have less than

a 15 year supply. Five year adjustments in the developable land inventory may include either additions to or subtractions from this inventory, but the latter will occur only when new information reveals this land is ill-suited for development and it is replaced in the inventory by other lands. Just as important, and to ensure internal consistency, this review will also include an assessment and update of all other Plan elements.

CO-d The normal procedure for adding lands to the inventory shall be by amendment of the Plan at five year intervals. This policy shall not preclude any resident or property owner in Shasta County from requesting a General Plan amendment upon submission of the required application and payment of the prescribed fee.

CO-e The General Plan shall recognize four general types of living environments and shall distribute the developable land inventory among them so that future residents of the County have available the full range of lifestyle opportunities. These living environments are described in Table CO-5.

CO-f The General Plan shall contain residential, commercial, and industrial land use categories, each of which is described in the following tables and shall be implemented through more specific zone districts:

- CO-6 - Residential
- CO-7 - Commercial
- CO-8 - Industrial

CO-g The density limitations described in Table CO-6 do not apply to pre-existing legal lots. Such lots would be permitted to develop at a density of at least one dwelling unit per lot, provided that the applicable County Development Standards are satisfied.

CO-h A land capability analysis, which will provide criteria to establish actual residential densities and parcel sizes for lands designated Rural Residential A and B, shall be incorporated in the Zoning Ordinance.

CO-i The Rural Residential A (RA) designation shall be primarily applied to rural community centers and urban and towncenter fringes in order to accommodate residential development. The RA designation around community centers shall be expanded at a rate consistent with policies CO-b, CO-c, and CO-d.

CO-j Areas designated Urban (UR) or Suburban (SR) in excess of 30 percent slope should not be developed, but the residential density of 3 dwelling units per acre for areas designated UR and 1 dwelling unit per 2 acres for areas designated SR may be credited to the developable portions of the property. In areas designated Rural Residential A (RA) or Rural Residential B (RB), lands in excess of 30 percent slope may be either developed at 1 d.u. per 10 acres for RA designated areas and 1 d.u. per 80 acres for RB designated areas or an equivalent density credit may be additionally applied to the land that is less than 30 percent slope provided that other site capability criteria can be met.

CO-k To reasonably ensure the availability of land that can be developed to Suburban (SR) densities near urban and town centers, and to reasonably ensure that adequate services can be made available to these areas, the minimum parcel size for newly created parcels not served by a public or package sewage treatment facility or for parcels not contributing to a sewer assessment district shall be five (5) acres.

CO-l If a residential planned development is proposed in a UR or SR designated area, a density bonus of up to 25 percent over that allowed by the General Plan designation may be awarded, provided that when combined with other density bonuses, the overall density bonus does not exceed 25 percent.

CO-m Proposed land divisions that lie in two or more General Plan land use designations that allow residential development may be permitted to create smaller parcels (including clustering), than indicated by the density of any of the land use designations provided that:

- The maximum number of residential units does not exceed the combined total allowed by each designation, and
- If the area is designated as a resource area the resource is protected.
- If developed to the maximum allowable combined density, further residential development for the property will be forfeited unless additional density is permitted by a General Plan amendment.

CO-n Where existing parcels of land contain two or more detached legally constructed or installed residences or mobilehomes, residential land divisions may be allowed to exceed the General Plan land use density provided that:

- All such residences or mobilehomes were constructed or installed before January 10, 1984; and

- Each newly created parcel is occupied by at least one of these residences, and

- Each newly created parcel meets applicable County development standards in effect when the land division is approved.

CO-o The County shall develop and utilize a fiscal impact analysis system for evaluation of public service costs for development projects. When this system is developed, projects that prove not to be cost effective for the provision of services must provide offsets for those fiscal impacts. Projects found to be cost effective may be awarded a density bonus of up to 25 percent over that allowed within the General Plan designation, as long as the project remains cost effective, and provided that when combined with other density bonuses the overall density bonus does not exceed 25 percent.

CO-p Areas designated Urban Residential (UR) or Suburban Residential (SR) shall be within the adopted sphere of influence of a city or the special district(s) that serve town centers. The County shall adopt urban development standards for UR and SR areas.

CO-q All development applications, within the city's adopted sphere of influence, shall be referred to the city for review and comments as to the effect said proposal may have on future orderly urbanization.

CO-r The County shall develop specific plans for the Central Valley, Burney and Cottonwood areas, and for the Palo Cedro area before expansion occurs of the initial sewerage area.

CO-s Land within the proposed Stillwater drainage sewage area designated either RA or RB shall not be changed to a more intensive residential land use designation until a regional sewage system is assured and a more detailed plan is prepared for the area. The County retains the option, however, to accept specific plans for this area before the completion of the sewerage system provided the project can be integrated into the regional system.

CO-t Commercial development on Knighton Road, upon its extension and improvement as an arterial, shall be strictly limited, to the I-5 interchange and the area at the Knighton Road and Airport Road intersection.

CO-u The average density for lands designated RA within the Centerville Community Services District shall not exceed one residence per three acres.

TABLE CO-5: LIVING ENVIRONMENTS

Type of Living Environment	Incorporation Status	Applicable Communities	Services
Urban Center	Yes	Anderson Redding	All Urban Services
Town Center	No	Central Valley Cottonwood Palo Cedro Burney/Johnson Park Fall River Mills/McArthur	Most Urban Services
Rural Community Center	No	Sacramento Canyon • Lakeshore • Lakehead • Castella/Sweetbriar • South Dunsmuir Big Bend • Round Mountain • Montgomery Creek • Big Bend North East Shasta • Cassel • Hat Creek Lassen • Old Station (North & South) Eastern Forest • Shingletown • Viola Eastern Upland • Millville • Oak Run • Whitmore South Central Region • Mountain Gate • Jones Valley • Bella Vista • Happy Valley • Centervile • Shasta/Keswick	May have community water, but typically on-site; in limited instances may have community wastewater treatment, but normally on site,

TABLE CO-5 - Continued

Type of Living Environment	Incorporation Status	Applicable Communities	Services
		Western Upland • Igo • Ono • Platina French Gulch • French Gulch	
Rural Homesite	No	Not Applicable	No urban services

Source: Sedway/Cooke

TABLE CO-6: RESIDENTIAL LAND USE CATEGORIES AND DENSITY[1]

Land Use Category	Purpose	Maximum Resdiential Density
Urban	Provides living environments receiving full range of urban services within an Urban or Town Center	16 dwellings/acre[2,3]
Suburban	Provides living environments receiving most urban services, but characterized by lower population densities than urban residential category, and located within an Urban or Town Center.	3 dwellings/acres[2,3]
Rural Residential A	Provides living environments receiving no or only some urban services, usually within or near a Rural Community Center.	1 dwelling/2 acres[2,4,5,6]
Rural Residential B	Provides living environments receiving no urban services and located in areas of the County characterized by one or more of the following conditions: - severe limitations on septic tank use, - Uncertain long-term availability of water, or - proximity to lands categorized as timber, grazing, or croplands, - remoteness from Urban, Town, and Rural Community Centers, - extreme wildland fire hazard, and - inaccessibility via County maintained roads.	1 dwelling/5 acres[2,4,5,6]
Existing Residential	May be applied to residential areas that legally existed before January 10, 1984 that do not fit the land use designation or density applied to surrounding properties as established by the General Plan. Legal preexisting uses that lie within the designation shall be allowed to continue for an indefinite period of time, but may not expand beyond the intensity of use that existed on January 10, 1984. Said uses may be replaced with same or less intense use.	

[1]Densities based on approximately 2.7 persons per household.

[2]Variable lot size density averaging permitted.

[3]Maximum density may be exceeded by up to 25 percent based on Policies CO-1, CO-o, or H-d. These policies may be used individually or in combination to achieve the 25 percent density bonus.

[4]Density and parcel size to be determined by land capability analysis (in Zoning Plan).

[5]Density may not exceed 1 dwelling/10 acres if the proprty is not located within one mile driving distance of a paved road and if the access road to the property is located on an appurtenant easement.

[6]Residential clustering required in portions of the Day Bench area.

Revised 7/16/85

TABLE CO-7 COMMERCIAL LAND USE CATEGORIES
(To Be Determined by Zoning)

Commercial Category	Description	Locational Requirements
Local Convenience Center	Provides a limited selection of convenience goods within walking distance or brief driving distance of residents. Primary tenant is usually a small grocery store which might be supplemented by gas station, laundromat or other small establishments providing services to residents in the immediate area.	Should be along residential collector streets. Should have a support market area population of 1,000 to 3,500 persons and be located on one to five acres. May be located in areas designated by the the General Plan Land Use Map as C, UR, SR or RA.
Retail Commercial retail	Provides a wide range of facilities for the sale of goods and provision of personal services. It generally is applied to either the commercial portions of towncenters or to other shopping centers. When applied to shopping centers, the uses are generally conducted within a building and may range in size from neighborhood centers which may have a supermarket as the principal tenant, to a community center which may also include a variety or department store as a principal tenant. When applied to commercial areas of town centers or other existing retail places with similar types of activities, the uses may be broadened to include retail uses conducted outdoors, such as auto and boat sales.	Should be along an ar- or collector street. Shopping centers should be located on sites starting size from five acres and upward depending on the type of center and the anchor-tenant. Designated on the General Plan Land Use Map as Commercial (C).
Commercial/Light Industrial	Provides for a wide range of goods and services needed by residents and business firms which are inappropriate in other commercial centers due to size or operating characteristics or are not economically feasible in such centers. Uses include sale of construction and building materials, construction equipment, restaurant supplies, autos and trucks. Some light industrial uses may also be permitted including vehicular repair construction yards, truck terminals, and when found compatible with surrounding uses, fabrication of wood, metal or other materials. This is not intended for typical retail sales found in shopping centers, such as grocery stores, drug stores, etc.	Should be along arterials or collectors or in conjunction with a business or industrial park. Designated on the General Plan Land Use Map as Commercial (C) or Industrial (I).

TABLE CO-7 COMMERCIAL LAND USE CATEGORIES
(To Be Determined by Zoning)

Commercial Category	Description	Locational Requirements
Office Commercial or Business Park	Provides office space for firms providing administrative, professional or financial services. May also include other firms providing computer, reproduction, laboratory testing, and similar services whose operation and scale are compatible with the primary office uses. Small scale retail uses, primarily for use by employees of the area, may also be included.	Should be along an arterial or collector. Designated on the General Plan Land Use Map as Commercial (C).
Highway Commercial	Provides for the needs of recreation and business visitors. Accommodations of lodging, restaurants, gas stations, and automotive and truck service, food supplies, recreation supplies and equipment and may also include recreation facilities and small retail shops which primarily serve visitors needs.	Along access roads to I-5, fronting on State highways or along arterials providing access to major recreation designations. May be permitted in any land use designation. In cases where a highway commercial use is proposed in a resource area, it may be permitted if the surrounding resource uses will not be adversely impacted.
Commercial Recreation	Provides opportunities for the development of privately owned lands characterized by the natural environment for the purpose of providing commercial recreation activites that utilize and provide for the enjoyment of the natural environment. Examples of commercial recreation activities include campgrounds, fishing and hunting clubs, dude ranches, boating facilities and recreational vehicle parks. Other uses such as a restaurant, or small grocery store may be permitted when accessory to, supportive of and compatible with the recreation activity.	Designated on General Plan Land Use maps as R , or in an area in which the project fits harmoniously with the natural features, regardless of the land use designation.

TABLE CO-7 COMMERCIAL LAND USE CATEGORIES
(To Be Determined by Zoning)

Commercial Category	Description	Locational Requirements
Mixed Use	This category recognizes that in a rural setting the strict segregation of different land use types which is typically found in urban environments is neither necessary nor practical. At this scale, conflicts which may result from the intermixing of land uses may be addressed by County zoning and development standards relating to screening setbacks and architectural design. This designation, which may permit a mix of uses, is assigned to rural community centers, or may be assigned to locations outside of rural community centers if commercial or light industrial uses existed within the area to be designated MU before January 10, 1984. Residential uses may be permitted at a density of one dwelling per acre if the site is within a rural community center, and one dwelling per two acres if not within a rural community center. Commercial uses that may be permitted include local and tourist oriented retail uses, and professional offices. These would provide a wide range of goods and services to residents, businesses, and travelers including small scale establishments providing convenience goods such as food and drugs, materials and repair services needed by agricultural and forestry related business, and travel accommodations for travelers. This designation may also provide for small to moderate sized light industrial uses that will not cause odors, noise, visual or other adverse impacts.	Designated on the General Plan Land Use map as Mixed Use (MU).

TABLE CO-8: INDUSTRIAL LAND USE CATEGORIES AND POLICIES
(To Be Determined By Zoning)

Industrial Category	Description of Uses	Location Requirements
General Industrial	Provides for the intermixing of industrial uses with varying degrees of impacts, scales of operation, and service requirements (including rail access). Permits the inclusion of non-industrial uses providing materials and services are primarily used by industrial uses. Other non-industrial uses may be permitted on an interim basis with conditions providing for reversion to industrial uses.	Should be located along a freeway, highway or arterial. Designated on the General Plan land land use map as Industrial (I).
Light Industrial	Provides for the planned development of industrial parks or districts occupied by uses characterized by low or moderate impacts, varying scales of operations, and similar service requirements.	Located within an urban or town center or near a freeway, highway or arterial. Designated on the General Plan land use map as Industrial (I).

ECONOMIC DEVELOPMENT

INTRODUCTION

The economic development element is an optional general plan element authorized by Section 65303 of the Government Code. Economic development planning is defined as the optimum use of a community's scarce economic resources in a long-range process designed to effect lasting changes in the local economy and thereby preserve and enhance the quality of life. The economic development planning function in Shasta County is performed by the Overall Economic Development Program (OEDP) Committee. Therefore, it is not the purpose of this element to present an economic development plan. Instead its purpose is to present objectives and policies addressing the role of land use planning and regulation in economic development planning as defined by the OEDP Committee.

FINDINGS

Economy of Shasta County

The three major industries of the County in order of importance are timber, tourism, and agriculture. Each of these industries is dependent on the natural resource base of the County, which has both advantages and disadvantages. On the one hand, the natural resource base, if carefully managed, is a renewable resource and will always be available. On the other hand, employment in these industries tends to be seasonal, is extremely sensitive to fluctuations in the national economy, and is vulnerable to loss of the resource base to competing land uses. These are the major issues which must be addressed by local economic development planning.

Need for Economic Development Planning

In the United States economic development planning has traditionally been the domain of the private sector and has never been the exclusive responsibility of government. Recently this situation has changed at the local level and there has been increased interest in joint private-public sector economic development planning. Several reasons explain this development.[1]

> First, the resources available for economic development have become substantially more limited in recent years. There is less land available for this purpose; natural resources are less available; environmental restrictions have limited the uses to which resources can be put; available public revenues have been shrinking, due to either the rapidly rising costs of municipal services or the public clamour for reduced taxes, or both; and, finally, the overall

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[1]The following discussion is taken from Local Economic Development Planning: From Goals to Projects. American Planning Association, PAS Report No. 353.

real rate of economic growth throughout the nation has both declined and shifted its geographic concentration in recent years, with the consequence that many communities are no longer assured -- as they once were -- of obtaining a satisfactory share of a general national prosperity. Communities are becoming increasingly aware of the need to husband, control, and direct their resources in order to assure an economic future consistent with community interests.

Second, heightened concern for the quality of the environment in recent years has made many communities realize, for the first time, that planning will take place whether or not they are participants in it. Communities that five years ago rejected zoning ordinances as infringements on personal freedoms today are not only passing zoning ordinances, they are requesting state and federal assistance to undertake economic development planning. This has come about because they have realized that cherished community qualities can be destroyed as a result of decisions made by enterprises concerned primarily with their own interests. The growing view is that the freedom to enjoy traditional attributes of the community environment may be infringed upon by planners in the private interest in the absence of planning in the public interest.

Shasta County Economic Development Planning

Shasta County recognized early on the need for joint private-public economic development planning. The Economic Development Corporation (EDC) of Shasta County was formed in 1958 to promote industrial and economic growth and to alleviate the high seasonal unemployment of the County's two major industries - forest products and tourism. In 1965 the EDC expanded its activities, previously focused on area promotion, to include economic development planning through its designation by the Board of Supervisors as the Overall Economic Development Program (OEDP) Committee. This Committee initiated a diverse program whose most outstanding achievement is the Mountain Lakes Industrial Park. In 1977 the Committee promulgated its initial OEDP, including a detailed development strategy.

Two years later economic development planning in Shasta County took another evolutionary step forward with the establishment of the Superior California Development Council (SCDC). This agency is an amalgamation of the OEDP Committees of four Northern California counties - Modoc, Shasta, Siskiyou and Trinity. In 1980 the SCDC promulgated its four county OEDP covering the period from August 1980 to 1982. Listed below are objectives contained in the program's development strategy which have land use planning implications. These objectives are:

- Through comprehensive planning tools (zoning ordinances, subdivision ordinances, comprehensive plans, etc.) seek to preserve prime forest and agricultural lands.

- Assist communities and counties in land use planning to mitigate the impacts of residential development on agricultural lands and second home development on range lands.

- Seek to preserve and in many cases improve the water quality of the district. Floodplain management must be given a high priority in the local planning program.

- Investigate model energy elements for inclusion in local general plans.

- Develop an efficient multi-modal transportation system for the movement of people and commodities in the region.

- Assist communities in packaging sewer and water improvement projects.

- Assist housing authorities, developers, and communities in public housing projects and rehabilitation programs (especially for low-income and elderly persons).

- Seek adequate amounts of land zoned for commercial and industrial usage through the comprehensive planning program.

Most of the above objectives are reflected below in the General Plan economic development objectives. Those objectives not reflected within this element are incorporated in other elements of the Plan.

Demand for Land for Employment Purposes

Countywide employment projections for the next twenty years were developed for Shasta County. These projections were converted into acres of land required for employment purposes. The derivation of these projections is discussed in Appendix A. Because employment projections were based on population projections, low and high land requirement projections were developed.

In order to ensure that enough land will be available for employment purposes, the high projections are used and it is assumed that these requirements will be accommodated within the unincorporated area of the County.

OBJECTIVES

ED-1 Provision of a land development pattern, planning process, and regulatory atmosphere conducive to maintaining employment opportunities for County residents and fostering new economic development.

ED-2 Creation of opportunities for new businesses and industrial firms to locate within Urban, Town, and Rural Community Centers.

ED-3 Protection and enhancement of recreation and scenic resources to safeguard and promote recreation-based employment.

ED-4 Protection, enhancement, and increased utilization of the renewable resource base of Shasta County to:

- Maintain the employment opportunities provided by the agriculture and forest products manufacturing industries;
- Develop new employment opportunities oriented around renewable energy resources; and
- Replace the use of imported, nonrenewable energy resources with locally available renewable energy resources.

ED-5 Improvement of the transportation system (road, rail and air) to facilitate economic development.

ED-6 Designation of and protection from preemption by other land uses of locations especially well-suited for industrial development based on transportation access, availability of public services, proximity to compatible land uses, and size and configuration.

ED-7 Provide an efficient and positive regulatory climate that will serve to attract new industry to the County.

POLICIES

ED-a Shasta County shall ensure that a 15-20 year supply of land required for employment purpose is available within the County. The County shall continue its close working relationship with economic development groups to monitor the demand and supply of land for employment purposes, and the County shall make appropriate, periodic revisions to the General Plan in order to maintain the availability of employment land within the unincorporated area.

ED-b Recreation and scenic resources of the County's tourist industry shall be protected by the application of the Natural Resource Protection land use category as described in the Open Space and Recreation Element.

ED-c The Timber, Grazing, and Croplands land use categories shall be used as described in the Timber and Agricultural Elements to protect the land use resources of these industries and thus maintain the employment opportunities they offer.

ED-d The transportation system of the County shall be maintained and developed as described in the Circulation Element in order to facilitate economic development and employment growth.

ED-e Lands well-suited for industrial development based on transportation access, availability of public services, relationship to adjacent land uses, size, and configuration shall be placed in the Industrial land use category.

ED-f The County's regulatory system shall be adjusted to accommodate new economic development.

HOUSING

INTRODUCTION

The purpose of the housing element is to document existing and future housing needs and to provide a plan of action which the County will undertake to meet those needs. It is the County's goal to enable residents of all incomes to find suitable housing without the prospect of illegal discrimination.

This Section has been prepared in accordance with Article 10.6 (Sections 65580 to 65589) of the California Government Code. This section of the Code establishes legislative housing goals, among them:

- The provision of decent housing for all persons regardless of age, race, sex, marital status, source of income, or other arbitrary factors.
- The provision of adequate housing by location, type, cost and tenure.
- The development of a balanced residential environment, including access to jobs, community facilities, and public services.

These state housing goals are augmented by the County's housing goals which appear below. The housing element comprises goal-oriented statements (objectives) which are to be carried out through more specific policies and quantified programs (implementation measures).

The supporting evidence for these programs appears in Appendix D to the General Plan. Appendix D contains the analysis of population and housing characteristics, growth trends, employment trends, housing conditions, constraints to housing production, opportunities for energy conservation, and an assessment of future housing needs.

FINDINGS

The housing market of Shasta County cannot adequately meet the needs of a substantial number of Shasta County residents who must rely exclusively on their own resources. This condition will continue in the future and, in terms of numbers of persons affected, will increase with the population growth of the County. Appendix D quantifies the current unmet and short-term housing needs of Shasta County residents. The findings from this appendix are summarized below:

- Over the eight-year period 1984-1992, the County should plan for at least 7,000 additional housing units in the unincorporated area. Approximately 44% of these units should be affordable to households earning 80% or less of the median County household income.

- Approximately 19% of owner-occupants and 48% of renters paid more than 25% of their income for housing in 1980. Overpayment was most critical among very low income renters; nearly 90% paid more than 25% of their income for housing in 1980.

- 4.7% (1,085) of the unincorporated area housing stock in 1980 was overcrowded, defined as more than one person per room, excluding kitchens and bathrooms.

  Cottonwood had the highest incidence of overcrowding (11.9%), followed by Central Valley (6.9%).

- At a minimum, 13% of the unincorporated area housing stock contains deficiencies beyond routine repair and maintenance. Based on exterior surveys of approximately 5,100 housing units between 1982 and 1984 (18% of the housing stock) 334 of the units surveyed contained minor deficiencies, 277 contained major deficiencies, and 43 were beyond repair. The Self-Help Housing Improvement Program estimates that 25% - 30% of the housing in unincorporated Shasta County may require some level of repair.

- The County had nearly 11% of its residents in the unincorporated area below the poverty level in 1980. Central Valley (15.4%) Burney (17.8%), and Cottonwood (20.5%) had the highest concentration of poor residents. About 2% of all families were female-headed families below the poverty level in 1980.

- There were 12,684 lower-income families in 1980, families earning 80% or less of the median County family income. Of these families, 1,531 were large families (5 or more persons).

- Nearly 2,100 (3.2%) of the residents in the unincorporated area in 1980 reported a disability which precluded their use of public transportation. Such a disability may also be indicative of special housing needs.

- Depending on seasonal employment, between 600 to 1,000 farmworkers may reside in Shasta County between 1985 and 1991.

- Despite state and federal laws promoting equal access to housing by all social groups, illegal discrimination may occasionally occur in Shasta County, requiring an active government response.

As noted in the introduction to this element, the California Legislature has established a statewide housing goal of decent, affordable housing for all California families. This assignment comes at a time when local government's range of options for housing assistance has been substantially reduced; their ability to collect and expend tax revenues has been curtailed by

Propositions 13 and 4, and resources once available from the State and Federal governments have largely disappeared. In recognition of these facts, state law provides that the five-year housing objectives contained in the Housing Element may be less than housing needs when the latter exceed the resources available to the community to completely satisfy them. Under such circumstances, the quantified housing objectives must establish the maximum number of housing units that can be constructed, rehabilitated, and conserved over the five-year time frame. This approach is reflected in the following objectives.

OBJECTIVES

H-1 During the period 1984-1992 provide an adequate land supply capable of accommodating the construction of at least 7,000 housing units to be affordable to residents in the following proportions:

- 1,732 units affordable to households earning 50% or less of County household median income (including 105 units affordable to large families).
- 1,411 units affordable to households earning between 50% and 80% of County household median income (including 260 units for large families).
- 1,595 units affordable to households earning 80% to 120% of County household median income.
- 2,265 units affordable to households earning 120% or more of County household median income.
- Within the five-year period 1985-1989 (the effective period of this revised element), the County should plan for approximately 4,380 units in the same proportions as described above.

H-2 Plan for 6,500 - 6,600 serviced or serviceable lots on which the new housing units can be constructed between 1984 and 1992 in the following unincorporated areas:

- 3,882 units in the Redding/Anderson market area.
- 3,121 units in the remainder of unincorporated Shasta County (of the 7,003 units, approximately 342 should be multiple units). Another 240 units of this total are anticipated to be permanent second units on single-family lots.

H-3 Facilitate efficiency of regulatory processing by providing coherent and up-to-date regulations.

H-4 Provide incentives to developers to construct housing affordable to low and moderate income households.

H-5 Provide for low cost housing opportunities to reduce overcrowding and the price of housing.

H-6 Promote equal access to housing by all of Shasta County's residents regardless of race, color, sex, religion, national origin, age or other arbitrary distinctions.

H-7 Assist developers in creating low cost housing by providing information on State and Federal programs.

H-8 The County shall continue to pursue available funding for low cost housing.

H-9 Encourage energy conservation measures in new and existing units so that utility bills do not increase as a percentage of household income.

POLICIES

H-a Shasta County shall, in coordination with the cities of Anderson and Redding, ensure the availability within the County of an inventory of lands sufficient to accommodate the housing growth established in objective H-1 and sufficient to accommodate the population growth projected for the planning period.

H-b Apply for State and Federal Assistance to expand water and sewer facilities in town centers.

H-c Encourage the establishment of community facility improvement districts to finance needed public works for new development and existing residents.

H-d Shasta County shall continue to monitor and modify, as appropriate, the regulatory system to ensure its efficiency.

H-e Shasta County shall update the zoning ordinance to ensure its consistency with the General Plan.

H-f The County shall designate a department to be the central permit agency for all residential development.

H-g In accordance with State law, the Housing Element shall be revised every five years, and the next revision shall be completed within five years from the effective date of this element. In addition, the County will monitor its progress in implementing housing element programs.

H-h Developments in Urban or Suburban designated areas that are to provide at least 25% of the saleable units for low and moderate income housing may be awarded up to a 25% density bonus provided that when combined with other density bonuses, the overall density bonus does not exceed 25%.

H-i Shasta County shall continue to provide opportunities for the use of manufactured housing to help meet the housing needs of its residents.

H-j Shasta County shall continue to provide opportunities for second single-family residences and apartment units in appropriate areas.

H-k The County shall continue to encourage housing for the elderly and those in need of temporary medical care.

H-l The County shall assist alleged victims of discrimination in regard to equal housing opportunities. The assistance shall include ensuring that the complaint is referred to the proper State or Federal agency.

H-m Encourage a minimum of 1% of new housing units (72 units between 1985 and 1991) to be accessible to the physically disabled resident. All new apartment houses of five or more shall be adaptable for handicapped access.

H-n The County shall offer assistance to developers wishing to apply for any low and moderate income housing programs.

H-o Provide assistance, upon request, to developers wishing to use the Farmers' Home Administration or California Housing Finance Agency programs to finance housing in rural communities for low- and moderate-income families.

H-p The County shall pursue funding from State and Federal programs available for expansion and improvement of the housing stock of the County.

H-q Continue to assist at least 285 lower-income renters each year through Federal rent subsidies (Section 8).

H-r Assist 45 to 90 lower-income residents (households earning less than 80% of County household median income) each year to rehabilitate, repair, and weatherize their substandard units through Community Development Block Grant and Farmers' Home Administration Funds.

H-s Continue to participate with the City of Redding in a mortgage revenue bond program to provide below market interest rate financing to low- and moderate-income home buyers.

H-t New units constructed in Shasta County shall comply with State energy conservation (or mobilehome construction) standards.

IMPLEMENTATION:

H-1 Zoning for sufficient land. The County has designated sufficient land to accommodate nearly 87,000 new housing units. Sufficient sites will be made available in urban and rural areas to accommodate anticipated growth, however 1,732 (24%) of the 7,003 new units needed between 1984 and

1992 will have to cost $192 - $362 per month in 1984 dollars or less to be affordable at 30%[1] of monthly income, to the very low income target population. In addition, 1,411 (20%) of the 7,003 units will have to cost between $327 and $550 per month in 1984 dollars to be affordable at 30%[1] of monthly income to the lower income target population.

The County can help to reduce some of the costs of producing new housing by expediting permit review where possible and awarding density bonuses. In the absence of below-market rate and government subsidies, however, it is unlikely that much new housing can be constructed to meet the need of the total additional very low income group while maintaining the 30% cap on housing payments as a percentage of income. High interest rates further magnify the affordability problem.

The County's mobilehome policies will help to reduce housing costs for many households. But, even an inexpensive mobilehome on a single lot may be unaffordable to many lower-income households. For example, a $25,000 mobilehome, (including permit fees and transport costs) if financed with an adjustable mortgage at 11% (initial rate) and with a 20% downpayment, would cost $190 per month and require an annual income of $7,600. Add $15,000 for an improved lot, and the monthly payment at 80% increases to $305, requiring an annual income of $17,000. Many lower-income families will have to pay substantially more than 30% of their income to afford even a least cost home, unless the household has sufficient assets to purchase a lot for cash.

Therefore, of the 3,143 additional lower-income households the County should plan for in unincorporated Shasta County between 1984 and 1992, only about 1,200 households earning between 50% and 80% of the County median income could probably afford a "least cost" home whose cost does not exceed 30% of the household's monthly income. Virtually none of the households earning less than 50% of the County median income could afford a new rental unit at 30% of income to housing.

The most productive strategy the County can pursue is to facilitate as much new housing production as is consistent with health, safety and environmental goals so that existing housing can be vacated to provide additional housing opportunities for lower-income residents.

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[1]The 30% housing cost-to-income ratio is used to be consistent with revised federal rules for housing assistance programs. The dollar amounts reflect the adjustment for household size.

H-2 Community facilities district. The Mello-Ross Community Facilities Act of 1982 (Chapter 1439 of 1982) provides a mechanism by which cities and counties can designate areas in which public facilities and services are to be constructed and financed. The establishment of the district requires the approval of a majority of the affected residents if there are more than 12 qualified voters, or the owners of a majority of the affected acreage if there are fewer than 12 voters. Once a district is established, the local government may earmark property taxes, special taxes (if approved by 2/3 vote of the affected residents), or user fees to be targeted to provide the designated facilities in the district. Services are limited to police and fire protection, recreation programs, and the operation and maintenance of parks. Facilities can be any type of municipal facility authorized by the Board of Supervisors.

H-3 Water/sewer facilities grants. The Federal government, through the Farmers' Home Administration (FMHA), provides long-term loans at 5% interest to rural communities to help finance facilities to correct health and safety hazards. If the County can successfully apply for an FMHA loan, the money could be used to construct a needed facility. The loan would have to be repaid through user fees or special taxes. The program would help finance wastewater treatment and drainage facilities in the most needy areas of the County. Burney, Johnson Park, Central Valley, Cottonwood, Palo Cedro, McArthur, and Fall River Mills would be priority areas. To increase the success of local applications for such grants, the State Department of Housing and Community Development administers a technical assistance program that will provide up to $15,000 to rural areas for technical assistance in applying for Federal grants. Shasta County will apply for a technical assistance grant when money becomes available.

H-4 The County will continue to approve individual septic systems on lots where conditions will safely allow such wastewater treatment. The County shall provide land for development in communities where services are already available.

H-5 The County must review and update the zoning ordinance to be consistent with the policies of the General Plan. Periodic revisions to the zoning ordinance, General Plan and regulatory processes should be continued as needed to ensure consistency and minimum project processing time.

H-6 The County should continue to examine various departments and combine or reorganize functions where possible to form a central permit processing agency.

H-7 The Housing Element will be revised as required by the State.

H-8 For developments in Urban (UR) and Suburban (SR) General Plan designated areas that provide low cost housing a density bonus as prescribed by Government Code Section 65915 shall be available.

H-9 The County shall continue to designate land for mobilehomes in appropriate areas.

H-10 Continue to allow the placement of mobilehomes on one-family residential lots in all zones which normally do not permit mobilehomes provided such mobilehomes are placed on permanent foundations and meet other applicable County design criteria intended to make the mobilehomes compatible with one-family residences.

H-11 The Shasta County Zoning Ordinance should continue to provide areas for apartment units where services are available and for second single-family units. Based on the number of applications since the State second unit law was adopted, the County can expect to approve 30 permanent second units per year and 19 temporary second units per year for the medical home care of the relative.

H-12 The County shall continue to provide opportunities for senior citizen housing and for family care mobilehomes that supply temporary housing for the elderly and those in medical need.

H-13 Equal access to housing. Statistically, the proportion of any age group with a permanent disability increases with age. Residents 65 years and older, for example generally have the highest incidences of "public transportation disabilities" (defined by the U.S. Census as a condition which inhibits or prevents an individual from using buses, tramways, subways, trains, etc.). As the proportion of the population 65 years and older in unincorporated Shasta County increases, greater demands will be placed on new housing to be accessible to physically disabled residents. The County will encourage greater access to housing by handicapped residents in two ways. First, the County will enforce handicapped adaptability requirements of Title 24 of the California Administrative Code. These regulations took effect on September 15, 1984, and local jurisdictions must adopt their own implementing ordinances by September 15, 1985.

In addition to the State requirement, the County will encourage builders to provide at least one percent of new housing units with structural or equipment features which actually meet special handicapped access needs.

H-14 Technical assistance to developers for government programs. Shasta County will maintain information on State and Federal programs that developers can use to finance and operate housing developments that will include units for low- and moderate-income households. This information will

be made readily available to any interested developer. In addition, the County will provide any population, housing cost, household income, employment, or other information on file with the County, which may be of use in completing an application for government assistance.

H-15 The County shall continue to seek State and Federal funding for expansion and improvement of the housing stock.

H-16 Housing rehabilitation. The County received a Community Development block grant award of $600,000 in 1984 to rehabilitate 50 units occupied by lower-income households. Forty low interest loans and 10 grants will be awarded. In addition, the Self Help Housing Improvement Program (SHHIP), a non-profit agency, will conduct a minor repair program (up to $750) on 15 units and a major repair program on 15 units using Section 504 Farmers' Home Administration funds. The County will continue to apply for Federal assistance each year and, therefore, believes an objective of 45-90 units per year is achievable.

H-17 Mortgage revenue bonds. Shasta County has executed a joint powers agreement with the City of Redding to issue mortgage revenue bonds under the Redding-Shasta Home Finance Agency.

Bonds were issued in July 1983 in the sum of $14,700,000 to provide below-market rate financing for qualified buyers of 209 homes. Twenty-four of these homes will be located in unincorporated Shasta County. Mortgages will be made at 10% interest, which is over 3% below the prevalent rate for fixed-rate mortgages as of December 1984. The homes to be financed in unincorporated Shasta County will also be single-family homes ranging in price from $55,000 to $80,000. Qualified buyers must have an income no greater than 120% of County median income, and the home prices may not exceed 110% of the average area purchase price in the County.

Congress has authorized an extension of the mortgage revenue bond program through 1988. Congress has also approved a parallel mortgage credit program which would provide tax credit to qualified first-time homebuyers. The purpose of these credits would be to provide a tax savings equivalent or superior to a reduction in interest rates. The County will investigate the feasibility of the mortgage credit program once program regulations have been prepared by the Federal government.

H-18 Lower income renter assistance. The unincorporated County has 285 units in which lower income renters are partially subsidized under the Section 8 program of the U.S. Housing Act of 1937 (as amended in 1974).

Under the program, lower-income renters are provided a certificate by the administering County agency, which the renter provides to the owner of the rental unit. So long as the owner does not charge a rental rate exceeding the "fair market rent" established by the Federal Department of Housing and Urban Development, the administering County agency may provide the difference between the rent charged and 10% to 30% of the tenant's income (depending on the formula used to determine the tenant's contribution). It is uncertain if additional Section 8 certificates will be available in Shasta County during the 1985-1991 period. The number of certificates depends on the budget appropriations made each year by the Federal government. A new voucher program, in which assisted households would receive an allowance and have greater choice, has been approved by Congress principally in conjunction with rental rehabilitation grants. The new program was approved as a pilot program in limited areas. However, if the program is expanded and vouchers become available in Shasta County, the County will seek to use this source of funding.

H-19 Investigate the expansion of existing non-profit housing activities, jointly with Redding and Anderson, to develop cooperative housing, obtain below market-rate financing and take advantage of tax incentives for the development of low- and moderate-income housing and community facilities.

H-20 Energy conservation. Title 24 of the California Administrative Code requires energy conservation devices or features to be incorporated into all new housing developments. The chapter on energy conservation in Appendix D of the County General Plan explains the application of these standards to Shasta County. In addition, the County cooperates with Pacific Gas and Electric, in that company's zero interest payment (ZIP) weatherization program. The County includes weatherization as an eligible community development block grant activity as does the Housing Improvement Program in its minor Self Help Home Repair and Weatherization program. SHHIP hopes to serve 700 families annually with this program.

The County also may achieve energy conservation in the site development patterns through the clustering provision in the General Plan Habitat Resource and Timberland use designations and the increased densities allowed in the Timber and Rural Residential land use designations for sites within one mile of a paved road.

CIRCULATION

INTRODUCTION

The circulation element is concerned with the movement of people and goods. Section 65302 of the Government Code requires that the circulation element address the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities. Circulation is functionally interrelated with the land use pattern prescribed in the Community Organization and Development Element and has major implications for other elements, including noise, air quality, energy and community design.

FINDINGS

Elements of the Circulation System

The circulation system of Shasta County comprises several physical elements, some of which may be used by more than one mode of transportation. The level of treatment of each mode of transportation by the circulation element reflects its importance in the overall system.

Highways and Streets

Highways and streets are the most extensive element of the County's circulation system and they are used by both vehicular and nonvehicular modes of transportation. The privately owned automobile is the dominant mode of vehicular transportation, followed by trucks, buses, taxicabs, and bicycles. Nonvehicular modes of transportation are walking and horseback riding. Not all of the above modes of transportation can use the same highway or street at the same time without special provisions to avoid conflicts. Bicycle, pedestrian, and equestrian modes require the reservation of a portion of the right of way for their exclusive use.

Public Transportation includes the Redding Area Bus Authority providing service within the City of Redding and surrounding urbanized area along fixed route, as well as demand response service, four interregional bus lines, a local bus service between downtown Redding and the Redding Municipal Airport, three local taxicab companies, several social service transportation systems serving the elderly and the disabled and school buses.

Interstate 5 is the major highway in Shasta County and its intersection in Redding with other State and County roads, including Routes 299 and 44, forms the focal point for the highway transportation network of the County. In the eastern portion of the County, Route 89 provides a north-south link between Routes 299 and 44.

Railroads

Shasta County is served by two railroad lines: The Southern Pacific single track main line which parallels Interstate 5, and the McCloud River Railroad, a single track short line running from McCloud to Burney. Southern Pacific carries both passengers and freight, while the McCloud hauls only freight.

Railroad transportation supplements and, in some instances, directly competes with transportation provided by trucks.

Air Travel

There are four publicly operated airports in the County. Redding Municipal and Benton Field are owned by the City of Redding. Shasta County owns the Fall River Mills airport and leases the Shingletown Airport. Redding Municipal provides scheduled air carrier service while charter service is available at Benton Field and Redding Municipal Airport. Two privately owned airports, Enterprise Sky Park and Redding Sky Ranch, are located in Shasta County.

Pipe and Transmission Lines

Pacific Gas and Electric operates several natural gas pipelines within the County, and PG&E and the Central Valley Project maintain electric transmission lines serving hydroelectric projects throughout the County. Pacific Power and Light Co., the City of Redding, and the Shasta Dam P.U.D. also have electrical transmission facilities in the County.

County Overview

The most important features of the circulation system in Shasta County are its dependence on the privately owned automobile and the location of a major multi-modal (auto, truck, bus, rail, air, and pipe and transmission line) transportation corridor within the SCR Planning Area.

Relationship of the Circulation System to the Community Development Pattern

The circulation system and development pattern of a community are interdependent. A particular development or land use pattern will generate special, quantifiable circulation requirements. The range of options available to meet these requirements will in part be determined by the existing development pattern. To use simplistic examples, the option of providing an airport to meet the need for fast freight delivery will be limited by acceptable terminal locations and by the existing development pattern. Likewise, the option to widen a roadway to increase its capacity will be limited by the land use pattern adjacent to the existing right-of-way.

Conversely, the design of a circulation system in a certain geographic area will play a major role in shaping its future development pattern. The most dramatic example of this relationship is the construction of an interstate highway through a previously undeveloped area. The exact route of the highway and the size, location, and spacing of interchanges will exert major influences on the type and intensity of future land uses.

The experience of Shasta County during the past two decades demonstrates that the development pattern of a community can substantially change in a relatively short period of time. Changes in the development pattern necessitate changes in the

circulation system. However, the pre-existing development pattern can significantly limit the options available to meet these requirements, either by completely excluding them or greatly increasing their costs.

Since the General Plan prescribes a future development pattern, it also presents the opportunity to formulate a desired circulation system to serve this pattern and guide development so that this desired system, may be realized with the minimum expenditure of private and public funds, dislocation of existing land uses, and adverse environmental impacts. The following discussion indicates how the various elements and transportation modes of the circulation system may be addressed by the General Plan in order to provide a circulation system which will adequately serve the future land use pattern.

Highways and Streets

The development pattern contained in the Plan was analyzed according to type and density/intensity of land use to determine future circulation requirements expressed in terms of a highway and street network and the function to be served by each link in the network. Designation of the network permits the reservation of its future right-of-way so that it is not preempted by other land uses. The function of a network link relates to the volume of traffic to be served and the desired level of service and is determined primarily by the width of the vehicular right-of-way. Functional classification of network links according to future land use pattern enables the establishment of an ultimate right-of-way width and its reservation to serve this future pattern. In addition to right-of-way reservation, establishing the network and its functional classification facilitates the development of an adjacent land use pattern compatible with respect to noise sensitivity, access requirements, and ability to support a public transportation system.

During the planning period, the SCR Planning Area will experience significant growth. Already the existing land use pattern places severe limitations on the future development of the roadway network required to serve this growth. This is especially true in the area east of Redding between Routes 299 and 44. Scattered small parcel residential development in this area dictates either the demolition of existing housing to acquire right-of-way or moving further to the east where existing development is less dense. This area demonstrates the need for the General Plan to establish a future circulation network designed to accommodate the development pattern, and to faithfully adhere to it.

Rail

The development pattern contained in the Plan and the industrial land uses contained in the pattern will generate demands for rail service. Since the railroad rights-of-way in Shasta County, including service spurs, are fixed and not likely to be expanded, it is important to ensure that lands now served by rail are reserved for land uses requiring this service. The development pattern should also locate land uses sensitive to

the noise impacts of rail at sufficient distances from the right-of-way. Finally, the railroad system should be integrated with other elements of the circulation system, both to avoid conflicts (e.g., at-grade crossings) and to mutually support one another.

Air

The future economic development of Shasta County will in part depend on the level of service provided by Redding Airport. The development pattern in the vicinity of the airport should permit the future growth of the airport, both in terms of expansion of its physical land area and the type of equipment used. Noise and safety impacts of future airport expansion are the critical issues. The development pattern should also prevent lands surrounding the airport from being preempted by uses, such as residential, which do not make optimum use of air service.

Pipe and Transmission Lines

Future hydroelectric power development in Shasta County will cause the need for transmission lines. It is not known at this time to what extent these developments will require new transmission line corridors. Once these requirements are identified, the development pattern can help ensure their reservation.

Relationship of Circulation System to Noise, Air Quality, Energy, Safety, and Public Finance

The circulation system has important implications for noise, air quality, energy consumption, public safety, and the costs of road construction and maintenance. These relationships are outlined below.

Noise

Certain land uses, such as residences, schools, and hospitals are more sensitive to noise generated by the circulation system than are other land uses. The circulation system, both as it exists now and as it will exist in the future, can be analyzed and its noise impacts measured. This permits the location of future development to avoid or mitigate these impacts.

Air Quality

The circulation system is used by vehicles which consume fossil fuels and thereby generate emissions that degrade air quality. Air quality degradations caused by these emissions have both health and safety, and aesthetic impacts. These aesthetic impacts relate primarily to visibility and the ability to enjoy views of the surrounding natural environment.

The SCR Planning Area contains a major multi-modal transportation corridor. This planning area also encompasses much of the northern portion of the Sacramento Valley Air Basin. Automobile emissions are the primary cause of air quality

degradation within the SCR Planning Area. Some portion of the total auto emissions are associated with traffic passing through the County, but most are caused by auto trips either originating, terminating or occurring within the County.

Another important contributor to air quality degradation in the SCR Planning Area relates to suspended particulates generated by unpaved roads. Unpaved roads are major sources of particulate matter in Shasta County. The Shasta County Air Pollution Control District estimated that in 1983 about 39% of the inventoried particulate emissions came from unpaved roads. Because most industrial sources are controlled, population growth on unpaved roads is estimated to increase this percentage during the planning period. This is the largest single source category, far exceeding all industrial sources in the County.

The effect of unpaved road dust (and all particulates) is to raise the measured levels of total suspended particulates and reduce visibility. As population increases, the construction of new, unpaved roads can be expected to result in higher emissions of particulates in the future.

Energy Consumption

It has been noted that the circulation system in Shasta County is dominated by the privately owned automobile. It is still relatively inexpensive to rely on private automobiles, so there is little incentive to explore alternatives. However, if gasoline prices continue to increase at the rate they have increased for the past eight years,[1] the cost of gasoline will consume an increasingly larger share of a household's budget.

The major alternative to the use of the automobile is the development of a public transportation system serving the SCR Planning Area. This system would use buses that share the vehicular right-of-way with autos and trucks. The key to developing this type of transit system is a supporting land use or development pattern.

A pattern which facilitates transit has the following characteristics: one, it locates residential development within a reasonable walking distance of a transit route at densities sufficient to generate a level of ridership which in turn will support transit service at frequent enough headways so that it offers a viable alternative to the service provided by the automobile. Residential development within the transit service area should be at an average density of at least seven dwelling units per gross acre. Two, it connects land uses, such as retail districts, labor intensive industries, educational centers, and medical facilities, that generate high traffic volumes and transportation system modal breaks (where a system ends, e.g., Redding Airport). The major destination points

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[1] 25 percent per year from 1973 to 1978 and 20 percent per year from 1978 to 1981, including inflation, or 17 percent and 12 percent per year excluding inflation.

designated along the transit service area should be the preferred locations for new land uses which will generate high traffic volumes. The design and site planning of new residential uses that may be served by public transit within the transit service area and of new land uses within and adjacent to destination points should make reasonable provisions for future transit vehicle access.

The existing development pattern in SCR does not have the above characteristics, and if current development trends continue, it will not be achieved. The result will be that any transit system that is developed will require a substantial public subsidy to support is operations.

If an economically feasible transit system is to be a realistic future option in the SCR Planning Area, action should be taken now to guide development in a transit facilitating pattern as described above.

Public Safety

The circulation system has implications for public safety in three important areas. One, the system provides emergency vehicles with access to residences and businesses. Two, the system provides escape routes in the event of personal emergencies and area wide disasters. Last and most importantly, the design and use of the system by vehicle operators has major safety implications for all persons travelling within it. A system which is poorly designed in terms of network routes, road surfaces, and signals and which is improperly used will not adequately provide for public safety.

Public Finance

In 1983 there were 1,246 miles of roads within the County maintained system. The total 1983 budget for road maintenance was $4.2 million, which included snow removal, patching, drainage, cleaning and storm repairs, plus minor and major improvements such as road resurfacing and alignment improvements. Construction of new roads was not included in the 1983 budget. All of this $4.2 million cost is covered by state and federal subsidies, with state funds contributing 88% and federal funds 12%.

These subsidies are generally not based on the total mileage in the system and in recent years the amount of federal and state subsidies has been declining both in current and constant dollars. The total County road maintenance budget in 1977 was $5.3 million, which included a very small amount of County funds, to maintain 1,228 miles of road. By 1983, the maintenance budget had shrunk to $4.2 million. Adjusting this figure for inflation, the 1983 maintenance budget was $2.7 million in 1977 dollars. In constant dollars and average cost per mile in 1977 the County was able to spend $4,316 per mile to maintain its roads, while in 1981, it was able to spend only $2,170 per mile.

The amount of state and federal subsidies available to the County has been declining both in current and constant dollars. Therefore, in the future the County will have less money avail-

able to maintain both its existing road system plus any new roads which are added to it. The major planning implication here is that public finance considerations support locating new development where it can be served by roads currently within the County's system.

Need for Inter-jurisdictional Coordination of Circulation Systems and Development Patterns

The circulation system of Shasta County serves the cities of Anderson and Redding as well as unincorporated areas, and the need for interjurisdictional circulation system planning is self-evident. Implicit in coordinated circulation planning is coordinated development planning.

A forum for interjurisdictional circulation planning presently exists in the Regional Transportation Plan for Shasta County, initially adopted by the Shasta County Metropolitan Planning Organization (formerly the Local Transportation Commission) in 1975 and reviewed by the MPO every two years. The MPO is composed of representatives of the two cities and the County. The Regional Transportation Plan must consider and incorporate, as appropriate, the transportation plans of cities, counties, and other local agencies.

Circulation Implications of the Development Pattern

Highway and Roads

The land use pattern described in the Community Organization and Development Element of the General Plan has major implications for the highway and road networks in the SCR Planning Area, and to a lesser extent the North East Shasta Planning Area. Of equal importance in SCR are the circulation implications of land use decisions reflected in the General Plans of Redding and Anderson. In the case of Redding, its General Plan addresses a 134 square mile planning area containing unincorporated lands.

Given the above status of General Planning in SCR, a detailed assessment of the circulation implications of future development in this Planning Area was completed based on the density and intensity of uses proposed in the Shasta County, Redding, and Anderson land use elements.

The analysis of the traffic implications of growth within SCR and North East Shasta examined all the major roads in the County. A summary is given below of the the major corridors leading from the unincorporated areas into the incorporated urbanized areas. Traffic generated by growth in the outlying areas was calculated and assigned to these corridors.

ROUTE 299 WEST OF BURNEY. This location was used to analyze the traffic impacts of the growth of Burney/Johnson Park, Fall River Mills/McArthur, Cassel and Hat Creek on the link between the SCR and North East Shasta Planning Areas. It was concluded that the existing capacity of Route 299 will be able to accommodate the traffic resulting from this increase in growth.

ROUTE 299 WEST OF BELLA VISTA. This section of Route 299 will be affected by growth in the North East Shasta Planning Area and in Bella Vista.

ROUTE 44 WEST OF PALO CEDRO. This section of Route 44 will experience an increase in traffic volumes as a result of growth in Palo Cedro and the Eastern Upland Planning Area. The width of this road is four lanes until a point approximately 1/2 mile to the east of Airport Road, where it reduces to 2 lanes and continues east. Toward the end of the planning period, this 2 lane segment of Route 44 could begin to experience heavy traffic during peak conditions, requiring additional lanes.

PLACER ROAD WEST OF 273. This corridor will experience traffic increases due to the growth of Centerville and the west side of Redding. As a result of this growth, Placer Street west of Buena Ventura Road will approach its capacity as a two lane road, and the link from this point to Swasey Drive will require 4 lanes.

CLEAR CREEK WEST OF ROUTE 273. This corridor will be affected by the growth of Centerville and industrial uses along the corridor. Traffic analysis of this growth assumed the improvement and realignment of Texas Spring and Honeybee Roads. Analysis indicates that the capacity of this road will be exceeded and additional lanes will be required.

CANYON ROAD WEST OF 273. This corridor will experience traffic increases as a result of growth in the Happy Valley Area. Canyon Road will not be able to accommodate this growth at its present two lanes. A four lane road will be needed.

OLINDA ROAD WEST OF 273. This corridor will be able to accommodate the traffic generated by the growth of Happy Valley.

LAKE BOULEVARD WEST OF 273. This corridor will experience major traffic increases as a result of growth in the Central Valley Area. Lake Boulevard will require major improvement and expansion to four lanes is recommended.

ROUTE 151 WEST OF I-5. Analysis of this corridor assumes the construction of two new road connections north and south of the Route 151/I-5 Interchange. The north connection is Black Canyon Road between Central Valley and the Old Oregon Trail - I-5 Interchange, and the south connection is Pine Grove between Ashby Road and I-5. With the improvements, Route 151 will require 4 lanes. The widening of Route 151 should only be undertaken as part of a specific planning study of this corridor which examines it from Lake Boulevard to Interstate 5. This corridor study should comprehensively examine roadway improvements, redevelopment of the adjacent commercial areas, physical design of the corridor, and transit links between Central Valley and Redding.

OASIS ROAD WEST OF INTERSTATE 5. The existing two lane facility will not have adequate capacity to handle anticipated traffic volumes. A four lane road will be needed.

QUARTZ HILL ROAD WEST OF ROUTE 273. The linkage between Quartz Hill Road and Route 273 will require improvement to accommodate growth in the Quartz Hill area. Quartz Hill Road will require 4 lanes to accommodate this growth.

OLD OREGON TRAIL BETWEEN OASIS AND ROUTE 44. This corridor will experience significant increases in traffic due to the growth in the areas designated by the Plan as Stillwater and Upper Churn Creek. A four lane highway between Route 44 and Shasta College will be required to accommodate this growth.

Railroads

The General Plan development pattern assumes a year 2000 population of 200,000 persons. Realization of this population growth will require substantial expansion of the County's employment base. The major implication of this economic expansion with respect to rail service is that the freight service operated by Southern Pacific Railroad will likely increase in importance and its accessibility to the Mountain Lakes Industrial Park north of Redding and industrial areas south of Redding should be assured.

Air

The economic development of Shasta County will be strongly influenced by development in the vicinity of Redding Municipal Airport. Recognizing the need for careful planning for its future development, the airport and its environs are the subject of a specific planning study jointly sponsored by Shasta County and the cities of Anderson and Redding and adopted by each jurisdiction.

The circulation implications of the Redding Airport Specific Plan relate to appropriate uses of lands adjacent to the airport and to the highway and road network required by these uses. Regarding the latter, Airport Road between Highway 44 and the City of Anderson and the linkage of the airport with Interstate 5 via Knighton Road has major circulation implications.

Road Standards Implications of Development Pattern

Land use pattern of an area, specifically the types of uses and the density/intensity of development, will determine its circulation requirements with respect to the network of highways and roads and the functions served by the links in the network. Function relates to the width of vehicular right-of-way, as well as to the standard to which this right-of-way is developed. The functional distinctions among roads are reflected in their varying standards for these key items:

- Type of vehicular surface, paved or nonpaved,
- Width of vehicular surface,
- Drainage improvements, and
- Pedestrian improvements.

In order for Shasta County road standards to adequately respond to the circulation implications of the development pattern, the following changes are necessary. One, a single set of ultimate road standards should uniformly apply to all subdivisions, regardless of the number of parcels to be created. Two, road standards should reflect functional road classifications and density/intensity of land use as determined by the General Plan development pattern. Three, privately maintained roads should meet the same standards as publicly maintained roads and the County should adopt a mechanism for enforcing private maintenance.

OBJECTIVES

C-1 Existing road capacity available within the County road system should be used to serve future development prior to constructing new County maintained roads.

C-2 Recognition of the private automobile as currently the primary means of personal transportation in Shasta County, combined with development of a land use pattern which mitigates, where feasible, the adverse air quality and energy consumption impacts of the automobile.

C-3 Encourage development of a land use pattern based on future public transportation needs and alternative methods of transportation which emphasize energy conservation and minimizes vehicle miles traveled.

C-4 Recognize pedestrian and bicycle circulation as functional alternatives to the automobile in urban and suburban areas.

C-5 Formulation and adoption of circulation design standards that:

- o Are uniformly applied on a Countywide basis according to development type;
- o Respond to public safety and health considerations, especially vehicle and pedestrian safety, emergency access, evacuation routes, and the existing noise environments of communities;
- o Address all modes of transportation; and
- o Will not result in substantial deterioration of air quality.

POLICIES

C-a Shasta County and the cities of Anderson and Redding shall jointly coordinate planning within the urban and suburban areas of SCR in order to develop a consistent land use pattern and a circulation system adequate to meet the short and long-term needs. The Shasta County Metropolitan Planning Organization shall be used as the principal agency for interjurisdictional circulation planning. The resulting circulation system shall be reflected in the general plans of each jurisdiction and in the Regional Transportation Plan for Shasta County.

C-b In order to adequately plan for the future circulation network regarding highways, roads, and streets, the General Plan shall use the following functional hierarchy and related policies in its circulation planning:

- PRINCIPAL ARTERIAL: Provides regional, statewide and national transportation connections. All principal arterials are under state jurisdiction and include local state highways as well as interstate highways. Access from principal arterials to adjacent properties should be limited for safety and traffic efficiency. Right-of-way widths are to be determined by Caltrans.

- ARTERIAL: Provides connections between links in the highway network and connects major destinations with the highway network. Access from arterials to adjoining properties should be limited for safety and traffic efficiency. Curb side parking should be prohibited where feasible. For the purpose of Section 66484 of the Subdivision Map Act, an arterial shall be considered a major thoroughfare. Arterials shall be shown on Plan Maps.

- COLLECTOR: Accommodates traffic between principal arterials, arterial streets and/or activity centers. Direct access to individual residential lots should be limited where feasible to improve traffic safety and efficiency. For the purpose of Section 66484 of the Subdivision Map Act, a collector shall be considered a major thoroughfare. Collectors shall be shown on Plan Maps.

- SUBCOLLECTOR: Subcollectors serve between 300 and 700 potential residences. Direct access from adjoining parcels is permitted. Curb side parking is also permitted, but should be discouraged in planned developments for reason of safety, aesthetics, and energy conservation. Subcollectors are not shown on the Plan maps.

- MAJOR LOCAL STREET: Provides access from 50 to 300 potential residences. Major local streets provide direct access to individual adjoining properties. Major local streets are not shown on the Plan maps.

- LOCAL STREET: Provides access from 25 to 50 potential residences. Local streets provide direct access to individual adjoining properties. Local streets are not shown on the Plan maps.

- MINOR LOCAL STREET: Provides access for up to 25 potential residences. Minor local streets are the only streets which may dead end in a cul-de-sac or court. Minor local streets are not shown on the Plan maps.

- MINOR STREETS: Other types of streets that carry very low volumes of traffic may also be utilized. These streets are not shown on the Plan maps.

Figures C-1 and C-2 identify the arterials and collectors. Arterials and collectors are further divided into urban and rural roads. Urban roads generally require more right-of-way per lane, more lanes, and full urban improvements such as curbs, gutters, and sidewalks. All projects shall be evaluated as to their conformance with this circulation network.

C-c Existing accessibility to rail service in the SCR and Northeast Shasta Planning Areas shall be protected by the development pattern from preemption by incompatible land uses. Opportunities for increasing accessibility to existing rail service shall be preserved by the development pattern.

C-d Shasta County, in conjunction with the cities of Anderson and Redding, should strive towards the development of a land use pattern that will accommodate a future public transit system.

C-e Residential developments at urban and suburban densities should incorporate functional internal circulation networks for pedestrians and bicyclists. These internal networks shall be connected to the external circulation system and shall, to the extent feasible, link residential areas to service centers.

C-f Circulation improvements required for new development shall provide for emergency access by police, fire, and medical vehicles, and shall provide for escape by residents/occupants of the development, including alternative automobile escape routes; and shall provide a second means of access, when feasible, to improve overall circulation.

C-g Development adjacent to arterials and collectors should be designed to minimize the noise impact received from traffic. The circulation system shall also be designed with consideration given to its noise impacts on adjacent development.

C-h Shasta County shall encourage and support efforts by County residents to form assessment districts and other mechanisms for replacing unpaved roads with paved roads.

C-i As provided in the Air Quality Element, roads serving new land divisions under 1,000 feet elevation shall be paved to the extent necessary to avoid air quality impacts.

C-j In areas designated as Mixed Use (MU), Commercial (C), or Industrial (I) land divisions and discretionary uses shall ultimately be served by a paved road to the site. All other non-residential discretionary uses not located in a General Plan area described above, excepting agricultural and timber management activities, shall ultimately be served by a paved road, unless deferred or waived, based on traffic generation factors.

C-k In areas designated Urban Residential and Suburban Residential newly created one-family residential lots smaller than five acres shall not have direct access to arterials and major collectors, but shall be served by internal street systems unless it is physically unfeasible to do so. Commercial and industrial development shall have only limited access to arterials and major collectors.

C-l All proposed land divisions shall be legally accessible by a road.

C-m The County shall encourage the State Department of Transportation to widen State routes and improve intersections within said routes to accommodate traffic flow. These routes include Highway 299E to Bella Vista and Highway 44 east to Palo Cedro and others where necessary.

C-n Rural Residential A development along the north side of Route 299 between Fall River Mills and McArthur shall occur only within the area designated on the community plan map. Development shall be designed so that housing units utilize common collector roads located at intervals of no less than 1,000 feet.

FIGURE C-1 - CIRCULATION CLASSIFICATION
OF COUNTY ROADS

Planning Area	Road Name	Classification
Sacramento Canyon	Antlers	Collector 60
	Castella Loop	Collector 60
	Castle Creek Road	Collector 60
	Crag View Drive	Collector 60
	Falls Avenue	Collector 60
	I-5	Principal Arterial
	Lakeshore Drive	Collector 60
	Loma Vista	Collector 60
	Main Street (Lakehead)	Collector 60
	Riverside Road	Collector 60
	Riverview Drive	Collector 60
	Soda Creek Road	Collector 60
	Sweetbriar Avenue	Collector 60
	0H007	Collector 60
Northwest Forest	Highway 299E	Principal Arterial
Big Bend	Big Bend Road	Collector 60
	Buzzard Roost Road	Collector 60
	Fenders Ferry Road	Collector 60
	Highway 299E	Principal Arterial
North East	Black Ranch Road to Cypress Avenue (Proposed Southerly extension of)	Collector 64
	Bridge Street	Collector 64
	Carson Street (proposed extension)	Collector 64
	Cassel Road	Collector 60
	Cassel-Fall River Road	Collector 60
	Cypress Avenue	Collector 64
	Day Road	Collector 60
	Dee Knock Road	Collector 60
	Glenburn Road	Collector 60
	Highway 89	Principal Arterial
	Highway 299E	Principal Arterial
	Hudson Street (from Cypress Avenue North)	Collector 64
	Jim Day Road	Collector 60
	McArthur Road	Collector 60
	Mountain View Road	Collector 60
	Park Avenue	Collector 64
	Pittville Road	Collector 60
	Superior Avenue, Proposed (from Hudson Street to Black Ranch Road)	Collector 64
	Tamarack Avenue	Collector 64
	Tamarack Avenue (Proposed northerly extension to the Carson Street extension)	Collector 64
Lassen	Highway 44	Principal Arterial
	Highway 89	Principal Arterial

Planning Area	Road Name	Classification
Eastern Forest	Bull Skin Ridge	Collector 60
	Fern Road East	Collector 60
	Highway 44	Principal Arterial
	Oak Run to Fern Road	Collector 60
	Phillips	Collector 60
	Ponderosa Way	Collector 60
	Rock Creek Road	Collector 60
	Wilson Hill Road	Collector 60
Eastern Upland	Ash Creek Road	Arterial 70
	Black Butte Road	Collector 60
	Bull Skin Ridge Road	Collector 60
	Buzzard Roost Road	Collector 60
	Coleman Fish Hatchery Road	Collector 60
	Fern Road	Collector 60
	Dersch Road	Arterial 70
	Gover Road	Collector 60
	Highway 44	Principal Arterial
	Highway 299E	Principal Arterial
	Millville Plains	Collector 60
	Oak Run Road	Collector 60
	Oak Run to Fern Road	Collector 60
	Old 44 Drive	Collector 60
	Parkville Road	Collector 60
	Ponderosa Way	Collector 60
	Silver Bridge Road	Collector 60
	South Cow Creek Road	Collector 60
	Swede Creek Road	Collector 60
	Whitmore Road	Collector 60
	Wild Cat Road	Collector 60
SCR	Airport Road (Hwy. 44 to Meadow View Dr)	Arterial 110
	Airport Road (Meadow View Dr. to North Street Bridge)	Arterial 120
	Arrowhead Road (from Beltline Road to Cascade Boulevard)	Collector 64
	Ashby Road	Collector 84
	Ash Creek Road	Arterial 70
	Balls Ferry Road (from First Street to Fourth Street)	Collector 64
	Balls Ferry Road (from Deschutes to City of Anderson)	Arterial 96
	Balls Ferry Road (remainder)	Arterial 70
	Bear Mountain Road (from Old Oregon Trail to Bernard Way)	Arterial 96
	Bear Mountain Road (from Bernard Way to Silverthorne Road)	Arterial 70
	Beltline Road (Proposed)	Collector 64
	Boyle Road	Collector 60
	Buena Ventura, Proposed (from Keswick Dam Road southerly to Redding)	Arterial 96
	Buena Ventura, Proposed (Westwood Avenue extension)	Collector 60

Planning Area	Road Name	Classification
	Canyon Road	Collector 84
	Canyon Creek Road (Proposed extension)	Collector 60
	Cascade Boulevard	Collector 64
	Charles Street (Gas Point to First)	Collector 60
	China Gulch Drive	Collector 60
	Churn Creek Road - City Limits to Knighton Road	Collector 84
	Churn Creek Road (from Knighton Road to Airport Road)	Collector 60
	Clear Creek Road (from Honey bee Road to Highway 273)	Arterial 96
	Clear Creek Road (Westerly)	Arterial 70
	Cloverdale Road	Collector 60
	Deer Creek Road	Collector 64
	Dersch (from Airport to Deschutes	Arterial 96
	Dersch (from Deschutes Easterly)	Arterial 70
	Deschutes	Arterial 96
	Dry Creek Road	Arterial 70
	East Stillwater-Bernard Way	Collector 60
	First Street (Cottonwood)	Collector 64
	Fourth Street	Arterial 70
	Gas Point Road (Northbound ramps (I-5 to Happy Valley Road)	Arterial 96
	Gas Point Road (Happy Valley Road to Platina Road)	Arterial 70
	Gold Hill Drive (from Holly Road to Old Oregon Trail)	Collector 64
	Granite Drive (Rock Creek Road to Highway 299)	Collector 60
	Happy Valley Road (from Gas Point Road to Canyon Road)	Collector 84
	Happy Valley Road (from Canyon Road to Highway 273	Collector 64
	Hawthorne Avenue	Collector 60
	Hawley Road	Collector 84
	Hilltop Drive	Arterial 96
	Holiday Road	Collector 60 to 76
	Honey Bee Road	Arterial 70
	Howard Lane (proposed extension)	Collector 60
	Intermountain Road	Collector 60
	Iron Mountain Road	Collector 60
	Keswick Dam Road (from Quartz Hill Road westerly)	Arterial 96
	Keswick Dam Road (from Quartz Hill Road easterly)	Arterial 96
	Knighton Road	Arterial 96
	Lake Boulevard (from Route 151 to Redding)	Arterial 96
	Lake Boulevard (from Route 151 northerly)	Arterial 70

Revised 9/29/89, 5/15/90

Planning Area	Road Name	Classification
	Lake Boulevard East	Arterial 96
	Locust Road	Collector 64
	Lower Springs Road	Collector 60
	Main Street (Cottonwood)	Arterial 96
	Meadow View Drive	Collector 60
	Mussel Shoals Avenue	Collector 64
	North/South Street (Proposed connecting First Street and Gas Point Road midway between Charles and I-5)	Collector 64
	Oak Street	Collector 60
	Oasis Road (I-5 to Old Oregon Trail)	Arterial 96
	Oasis Road (Lake Boulevard to I-5)	Collector 84
	Old Alturas Road (from Redding to Boyle Road	Arterial 96
	Old Alturas Road (from Boyle Road to Deschutes Road)	Arterial 70
	Old Alturas (extension to 299E)	Collector 60
	Old 44 Drive	Collector 60
	Old Oregon Trail (from Highway 44 to North College entrance)	Arterial 110
	Old Oregon Trail (from North College Entrance to Bear Mountain Road)	Arterial 96
	Old Oregon Trail 9 from Bear Mountain Road to I-5)	Arterial 70
	Olinda Road	Arterial 70
	Ox Yoke Road	Collector 84
	Palm Avenue	Collector 60
	Panorama Point Road	Collector 60
	Pine Grove Avenue (Proposed)	Collector 84
	Placer Road (from Texas Springs Road to Redding City Limtis)	Arterial 96
	Placer Road (Westerly)	Arterial 70
	Quartz Hill Road (from Keswick Dawm Road southerly)	Arterial 96
	Quartz Hill Road (from Keswick Dam Road northerly)	Collector 60
	Rancho Road (from Airport Road to Redding)	Arterial 96
	Rancho Road	Arterial 70
	Rhonda Road	Collector 60
	Riverside Avenue	Collector 60
	Rock Creek Road	Collector 60
	Shasta View (extension)	Collector 84
	Shasta View Drive (from Old Alturas to Highway 299E	Collector 84
	Shasta View Drive (from Highway 299E to Oasis Road)	Collector 64
	Swasey Drive	Collector 60
	Swede Creek Road	Collector 60
	Texas Spring Road (from Honey Bee Road to Branstetter Lane)	Arterial 70

Planning Area	Road Name	Classification
	Texas Springs Road (from Honey Bee Road to Placer Road)	Collector 60
	Twin View Boulevard	Collector 84
	Union School Road	Collector 60
	Union School Road (Proposed extnesion from Old Oregon Trail to Bear Mountain Road)	Collector 60
	West Anderson Drive	Collector 60
	Wonderland Boulevard	Collector 96
	Unnamed Road (between West Anderson Drive and Rhonda Road)	Collector 60
	Unnamed Road (between West Anderson Drive and Gas Point Road)	Collector 60
	Unnamed Road (Proposed between Twin View Boulevard and Holly Road)	Collector 64
	Interstate 5	Principal Arterial
	Highway 44	Principal Arterial
	Highway 151	Principal Arterial
	Highway 273	Principal Arterial
	Highway 299E	Principal Arterial
	Highway 299W	Principal Arterial
estern Upland	Clear Creek Road	Arterial 70
	Cloverdale Road	Collector 60
	Gas Point Road	Arterial 70
	Highway 36	Principal Arterial
	Placer Road	Arterial 70
	Platina Road	Arterial 70
French Gulch	Highway 299W	Principal Arterial
	JFK Memorial Drive	Collector 60
	Trinity Mountain Road	Collector 60

Revised 5/15/90

PUBLIC FACILITIES

INTRODUCTION

This element addresses those public facilities not discussed elsewhere in the Plan but that have a bearing on land use matters. This includes water supply, wastewater treatment, solid waste disposal, community recreation and schools. Fire and sheriff protection are discussed in a separate element in the Public Safety section since they are concerned with public safety. Circulation is also treated as a separate element due to the complexity of that topic.

Water supply, wastewater treatment and solid waste disposal are essential services required by all types and densities of development. Section 65302(d) of the Government Code requires preparation of an element for the conservation, development, and utilization of natural resources including water. This element must be developed in coordination with the Countywide water agency and with all district and city agencies which have developed, served, controlled, or conserved water for any purpose. Under authority of Section 65303, a local government may prepare an element showing a general plan for sewerage disposal. Finally, Section 65302(a) requires the designation of lands used for solid waste disposal facilities.

Community recreation and schools are public services which play major roles in determining the quality of life available in a community. Authority for these topics is provided by Government Code Section 65303.

FINDINGS

Nature of the Water Supply/Wastewater Treatment Problem

Water supply and wastewater treatment are concerned with the removal of water from its natural environment and its return to this environment after it has been used by man for a variety of purposes. The apparent simplicity of this mechanism is offset by the complexity of the natural resource base, particularly in two areas. Documentation of the ability of surface waters to supply water and to dispose of wastewater is a relatively straightforward process. Much greater difficulty is posed in attempting to document groundwater supply resources and the ability of soils to receive and treat wastewater. Since the surface water resources of Shasta County are geographically limited, the latter questions are very significant to the future development pattern, yet they are the most difficult to answer.

The Background Reports to the General Plan contain a comprehensive examination of the water and wastewater resources of Shasta County and their implications for future development. This study is based on the latest published literature and extensive communications with local authorities in these areas. Understanding the water supply and wastewater treatment opportunities and constraints operating in Shasta County is fundamental to understanding its future development potential. Major findings of this study are outlined below.

Water Supply

There are two sources of water supplies, surface waters and groundwaters, and two general methods of delivering water supplies, community systems and individual or family systems. Each type of delivery system may use either surface or groundwater as its supply source. The ground and surface water resources are not uniformly distributed throughout the County, and in different areas of the County different delivery systems have developed over time.

The California Department of Water Resources has identified two groundwater basins in Shasta County as significant sources of groundwater. One is located in the Sacramento River Valley and is named the Redding Groundwater Basin. The other is located in the Fall River Valley and carries its name.

The majority of the water supply in Shasta County comes from surface flows. In contrast to groundwater, surface waters are subject to a complex state legal system establishing the rights of individuals and other entities to these flows. The primary surface water resources in Shasta County are impounded within the Lake Shasta and Whiskeytown Reservoirs. Rights to these impounded waters are allocated under the jurisdictions of the Central Valley Project (CVP). Table WS-1 shows the allocation of CVP water in Shasta County. Some recipients of this water in turn sell a portion of their allocation to other agencies. Rights to other major surface water resources of the County have been similarly allocated to different individuals and entities. Pacific Gas and Electric is a major controller of water rights, which it uses for power generation purposes.

Careful review of Table WS-1 raises issues with important implication for future development in the SCR planning area. First, the substantial allocation of base water supply of the Anderson-Cottonwood Irrigation District must be noted. Although presently most of its allocation is used for irrigation, the use of this water for non-agricultural purposes represents a tremendous potential which must be kept in mind. Second, with the exceptions of the Cities of Anderson and Redding and Shasta County, none of the other water controlling entities are responsible for land use planning, yet decisions they make regarding the provision of water service have significant land use implications. Under their enabling authority, these decisions must primarily consider their financial implications for the customers served by the various contracting entities, and secondary consideration is given to their Countywide land use implications. Decisions made in the best interests of the customers of the CVP water contracting entity are not always in the best interests of Countywide land use planning.

TABLE WS-1

ALLOCATION OF CVP WATER IN SHASTA COUNTY

Contracting Entity	Water Allocation (AF) Base Supply[1]	Project Water[2]	Total
1. Anderson-Cottonwood I.D.	165,000	10,010	175,000
2. Bella Vista W. D.	0	24,000	24,000
3. Clear Creek C.S.D.	0	15,300	15,300
4. Daniell (Private Party)	13	7	20
5. Keswick C.S.D	0	500	500
6. Mountain Gate C.S.D.	0	350	350
7. City of Redding	17,850	3,150	21,000
8. City of Redding (Buckeye Area)	0	6,140	6,140
9. Riverview Golf Course (Private)	255	25	280
10. Shasta C.S.D.	0	1,000	1,000
11. Shasta County Water Agency	0	5,000	5,000
12. Shasta Dam Area P.U.D.	0	3,225±	3,225
13. Summit City P.U.D. (Now S.D.A.P.U.D.)	0	1,169±	1,169
14. Tharalson/Michiels (Private Party)	70	135	205
15. U.S. Forest Service (Centimudi Boat Ramp)	0	10	10
Totals	183,188	70,011	253,199

[1]Base supply is a local water right which existed prior to construction of the CVP and which is protected in CVP contracts. There is no charge for this water.

[2]Project water is water made available as a result of the CVP. This water is purchased from the Bureau of Reclamation.

Source: Shasta County Water Agency

An example of this potential for conflict is illustrated by Bella Vista Water District and Clear Creek Community Service District. Both districts enjoy substantial allocations of CVP waters, but at present they each use roughly half of their allocation. Bella Vista uses 11-12,000 acre feet per year, and Clear Creek uses 6,000 acre feet per year. In 1982, each district was required to pay for its total allocation, including that which was unused, or it would have lost the unpaid portion of its allocation. This requirement is being challenged in court by the Bella Vista Water District.

These full CVP allocations represent a significant resource to all residents of Shasta County. The central planning issue raised by the present pattern of allocation of CVP water in the SCR planning area is the need for coordination of land use planning with the supply of water. Currently each contracting entity is legitimately pursuing its own best interests, generally without regard for their larger implications. This situation demonstrates the need for one agency with overall responsibility for coordinating water supply planning within land use and related planning with the SCR planning area.

A possible resolution of this issue lies with the Shasta County Water Agency (SCWA), an entity of County government empowered to contract directly with the U.S. Bureau of Reclamation. Under one strategy, the SCWA would enter into a master contract with the Bureau consolidating all CVP allocations in Shasta County. All existing water entities which formerly contracted directly with the Bureau would then enter into contracts for their actual water requirements. These requirements would be reviewed every five years in sequence with the periodic revisions of the General Plan. The basis for reassessing and revising water allocations would be the Shasta County General Plan, which, as discussed under the Community Development Element, would provide the broad framework for and be in consonance with the plans for Anderson and Redding.

Under this strategy, the cost of maintaining unused CVP water allocation would be spread among all entities contracting with the SCWA. This would relieve the financial burden on those districts that are paying for unused allocation in order to keep it within the County. This is a more equitable approach because the benefits of preserving water allocation for future growth in the SCR planning area will be enjoyed by all its residents.

The major advantage of this approach is that land use and water supply planning in the SCR area would be coordinated, resulting in cost efficiencies in the provision of water service and other facilities required by growth.

Beyond the institutional issues outlined above, the availability of ground and surface water resources and delivery systems have major implications for the density/intensity of land use for development purposes. The water supply conditions are generally mapped in Figure 11 of the water and wastewater study. The major findings expressed is that the SCR and Northeast Shasta planning areas present the least constraints on future development with respect to the availability of water, while the other planning areas of the County are constrained in varying degrees. These findings are generally mirrored by those pertinent to wastewater treatment.

A complete understanding of groundwater resources of Shasta County is not available. The Untied States Geologic Survey is in the final stages of a Redding Groundwater Basin study. In 1982, the Department of Water Resources issued the "Northeast Counties Groundwater Update" for the Northeast portion of Shasta County. A study for the Eastern Upland portion of the County by the Department of Water Resources and Shasta County Water Agency is expected to be completed in July, 1984. As financial resources permit, the County should fund studies designed to improve the understanding of groundwater in Shasta County. Opportunities to obtain additional state and federal assistance in this area should be pursued.

One major opportunity which should be utilized is the monitoring of wells in certain areas of the County where groundwater quantities are unknown. This would ensure that new development will not jeopardize existing wells and will be able to meet its own long-term needs. To be useful, well monitoring must be conducted over long periods of time. Data collected when a well is initially drilled is valuable, but it provides no information regarding the well's long-term performance and impact on surrounding wells.

Well monitoring is an extremely controversial subject and is feared by many persons who believe monitoring will lead to regulation, taxation or exportation of this resource. As used here, well monitoring is designed to work in the interest of the individual who is currently operating a well by providing data which will alert County officials when further development in an area should be reduced, halted, or provided with some supplemental water supply system.

Wastewater Treatment

Wastewater may be treated and returned to the natural environment using one of several technical methods with either community or individual/family service systems. The scale of operation and economics of some technical methods requires that they be used within community systems. The various combinations of technical methods and service systems and their use throughout the County is discussed below.

The simplest system is the septic tank and leach field serving a single dwelling. The advantage of this on-site wastewater treatment system is its relatively low cost and its water recharge characteristics. Disadvantages relate to the narrow requirements of this system with respect to soil characteristics, topography, and the absence of seasonal or year-round high groundwater levels. Failure of a septic tank system is its major disadvantage because it may result in contamination of groundwater or other health related problems. Unless this failure is evidenced by odor, visual or mechanical symptoms, it may go undetected indefinitely. With few exceptions these requirements severely limit their use in Shasta County in that it cannot be assumed that every lot in the County of any size will be able to support a septic tank and leach field system. Ironically, those areas of the County with the least constraints on the use of this system are located in the Sacramento Valley area and are served by community sewer systems. Determining septic tank suitability requires site by site investigation, a costly and time consuming process.

The limited opportunities to use conventional septic tank and leach field systems in Shasta County has led to great interest in alternative or nonconventional on-site systems, including mound and aerobic systems.

The main advantage and prime reason that the mound has been developed is to provide an alternative for homes on sites unsuited to conventional trenches or beds. The soil absorption mound is particularly appropriate for lots where the water table or rock formations are too close to the ground surface or where soils are too low in permeability for effective percolation of the effluent.

Mound construction is similar to the construction of a seepage bed, except that it is elevated by imported sand fill to a height of several feet above existing soils. The septic tank effluent is normally pumped up into the mound, where it percolates through the sand and down into the native soils.

An aerobic treatment system is essentially a small, simplified version of large centralized wastewater treatment systems that use aeration to speed up bacterial breakdown of the organic material. Inside the tank is a screen to remove large solids, an aeration chamber, a settling chamber, and a disinfection unit. A diffuser or mechanical agitator inside the aeration chamber produces a steady flow of oxygen needed for the growth of aerobic bacteria. The bacteria-laden wastewater then moves to the second chamber where solids settle to the bottom.

The main advantage of aerobic units is that, if properly operated and maintained, they provide a better quality effluent, than a septic tank does.

The main disadvantages of aerobic devices are that they are expensive and require more maintenance than a septic tank. The property owner must be willing to maintain a close watch over the system to prevent mechanical or electrical failure and to ensure stable operation.

While alternative on-site wastewater treatment systems may ultimately help overcome the difficulties associated with conventional systems, their suitability for widespread application in Shasta County is unproven. Even if they are found to be viable, their use imposes substantial installation and operational costs.

The remaining wastewater treatment systems require some form of community collection, treatment, and disposal. The most common form of community system is the treatment plant which discharges treated effluent to a surface water course. Use of this system is limited by the availability of a water course to receive the treated effluent. There are only three available in Shasta County on a year-round basis: the Sacramento River south of the Bella Vista Water District intake near the Route 44 overpass, the section of the Pit River between Fall River Mills and Big Bend and the lower portions of Cottonwood Creek.

Other surface water courses in Shasta County may be used on a seasonal basis to receive treated wastewater. In dry summer months, the treated wastewater may be stored and a portion of it disposed of by land application. Again, the availability of this type wastewater treatment system is limited. Only Churn Creek is currently used for this purpose, and it is at capacity use. Use of Clover, Stillwater, and Cow Creeks for wet seasonal discharge of wastewater is not in accordance with the State Regional Water Quality Control Board Basin Plan.

Remaining methods of community wastewater treatment include winter storage and summer land application and the use of evaporation ponds. Use of the former method is limited by topography and soil conditions to the Eastern Forest, Eastern Upland, SCR, Western Upland and North East Shasta planning areas of the County. Use of evaporation ponds is limited by seasonal rainfall to parts of the Western and Eastern Upland, North East Shasta, and SCR planning areas.

As with water resources, the availability of wastewater treatment facilities have major implications for the density/intensity of land use for development purposes. Wastewater treatment conditions are generally mapped in Figure 22 of the background study. The major findings are that the SCR and North East Shasta planning areas present the least constraints on future development with respect to wastewater treatment. The other planning areas are constrained by the unavailability of community systems and limitations on the use of on-site systems.

Wastewater treatment in the SCR planning area also raises issues concerning the coordination of land use planning with the provision of service. In SCR, there are three community wastewater systems, the Cities of Anderson and Redding and the Shasta Dam Area Public Utilities District. Cottonwood and Palo Cedro will also soon have community wastewater systems. Presently there are proposals for more than a dozen separate wastewater treatment systems for the Stillwater and Cow Creek drainage basins.

Several schemes have been advanced to develop a comprehensive, area-wide wastewater treatment system which would provide additional capacity for the Redding and Shasta Dam PUD Systems, serve the airport and facilitate various development proposals in the Churn Creek and Stillwater Creek Drainage Basins. Significant economies in both private and public funds could be achieved through the phased provisions of wastewater treatment by a coordinated, area-wide system. Such a system could make maximum use of existing unused sewage treatment capacity, expand existing treatment plants and share the cost of constructing new ones, develop a collection system initially sized for its ultimate service capacity and relate the density of development to this capacity, and share system costs among the broad customer base.

This analysis suggests that the Shasta County General Plan, operating in concert with the plans of Anderson, Redding, the Shasta Dam Area PUD, and other interested parties, can provide the basis for coordinated, area-wide planning regarding the provision of wastewater treatment. The parameters of this system are outlined as follows:

- The system would provide additional capacity for the Shasta Dam PUD,

- The system would provide capacity to serve the unincorporated area north of Redding and south of the Shasta Dam PUD,

- The system would serve future urban development in the Stillwater area north of Route 299E, east of Interstate 5, and west of the west fork of Stillwater Creek,

- The system would serve future urban development in the area bounded by Route 299E, Stillwater Creek, Route 44 and the city limits of Redding,
- The system would serve development in the Airport Road/ Clover Creek area,
- The system would not serve the area located south of Route 299E and east of Stillwater Creek, and
- The system would not serve Churn Creek Bottom.

Solid Waste Disposal

As mandated by state law, solid waste disposal is under the purview of the Shasta County Solid Waste Management Plan, adopted in 1976 and amended in 1980. The Plan will be updated on a regular basis thereafter. This Plan, which addresses the collection of solid wastes, its disposal in sanitary landfills, and recycling, provides the basis for the County's total solid waste disposal program, including the identification, reservation, and acquisition of sites for solid waste disposal facilities. Because of its major land use implications, the following discussion addresses one aspect of this program. The Solid Waste Management Plan should be directly consulted for its other land use implications.

Shasta County is currently using a sanitary landfill located west of Redding. This is the West Central Landfill located in the Western Upland planning area near the intersection of Clear Creek and Ridge Roads. The storage volume of this site is 17 million cubic yards. Assuming a solid waste generation factor of 5.2 pounds per person per day[1], the population projection used in the Community Development Element, and the factor of 1,000 pounds per cubic yard,[2] 6.3 million cubic yards of solid waste will be generated during the period 1981-2000 by the entire County population. Therefore, the lifetime of the West Central Landfill would extend significantly beyond the planning period.

Locating a new solid waste facility is often controversial due to perceived and sometimes actual impacts to neighboring properties. Assembly Bills 3302 and 3433 address the dilemma of the public need for these facilities versus the impacts the facilities pose to surrounding private property owners. The intent of these laws is to make all interested parties aware of the locations of solid waste facilities and to ensure compatibility with surrounding land uses.

Figure PF-1 shows the location of all existing public and private solid waste facilities in the County. In addition, new solid waste facilities may be conditionally permitted according to the zoning plan if the site is first found to be favorably based on environmental and social constraints. This plan provides for new solid waste facilities to be conditionally permitted in all areas of the County as the need occurs. This requires the site to be compatible with adjacent land uses.

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[1] Final EIR for a Proposed Sanitary Landfill Site, April 1980, Appendix E, page 3.

[2] Ibid, Appendix D, page 2.

Once the solid waste facility is approved, new land uses in the surrounding area must be regulated to avoid incompatibility with the solid waste facility.

The General Plan also sets up a procedure to be updated every five years and will include updating Figure PF-1 to identify all new solid waste facilities.

Community Recreation

The community recreation needs of Shasta County residents and the degree to which these needs are met by County government vary with the type of community in which they live. Needs in the unincorporated urban areas of Central Valley, Cottonwood, Burney/Johnson Park and Fall River Mills/McArthur differ from the needs in the rural community centers, such as Oak Run, Ono, and Shingletown. Needs in the urban areas, where most lands close at hand are developed and population densities are high, are for publicly owned park lands, either developed as turfed playfields or equipped with facilities such as ball fields, tennis courts, basketball courts, etc. To a certain degree, recreation needs in these urban communities are satisfied by school districts, but their ability to function as recreation providers is limited both financially and by their responsibilities in other areas. Recreation needs in these areas have also been met in part by special districts and service clubs. Discussions with recreation officials in the unincorporated urban areas of the County indicate that a substantial portion of the recreation needs of the residents of these communities is not being met. These observations are based on the degree of use of available facilities and their inability to accommodate the total demand. Citing such factors as the impact of inflation on family income and the resulting decline in ability to purchase recreation, increasing gasoline prices, and the baby boom caused by the post-World War II generation now reaching child-bearing age, they predict this unmet demand is likely to increase. The growth of these urban areas over the 20 year planning period will cause a corresponding increase in recreational demand. In the face of these factors, the future ability of schools, special districts, and service clubs and organizations to continue to meet even that portion of the recreation needs they are now supplying is very questionable.

In the rural areas of the County, the recreation demands of residents are no less than those of persons residing in urban areas, but they are of a different nature. Open lands are close at hand, population densities are low, and opportunities for informal recreation are readily available. Schools and service organizations play a major role in meeting most, if not all, the needs of rural community residents for developed recreation facilities.

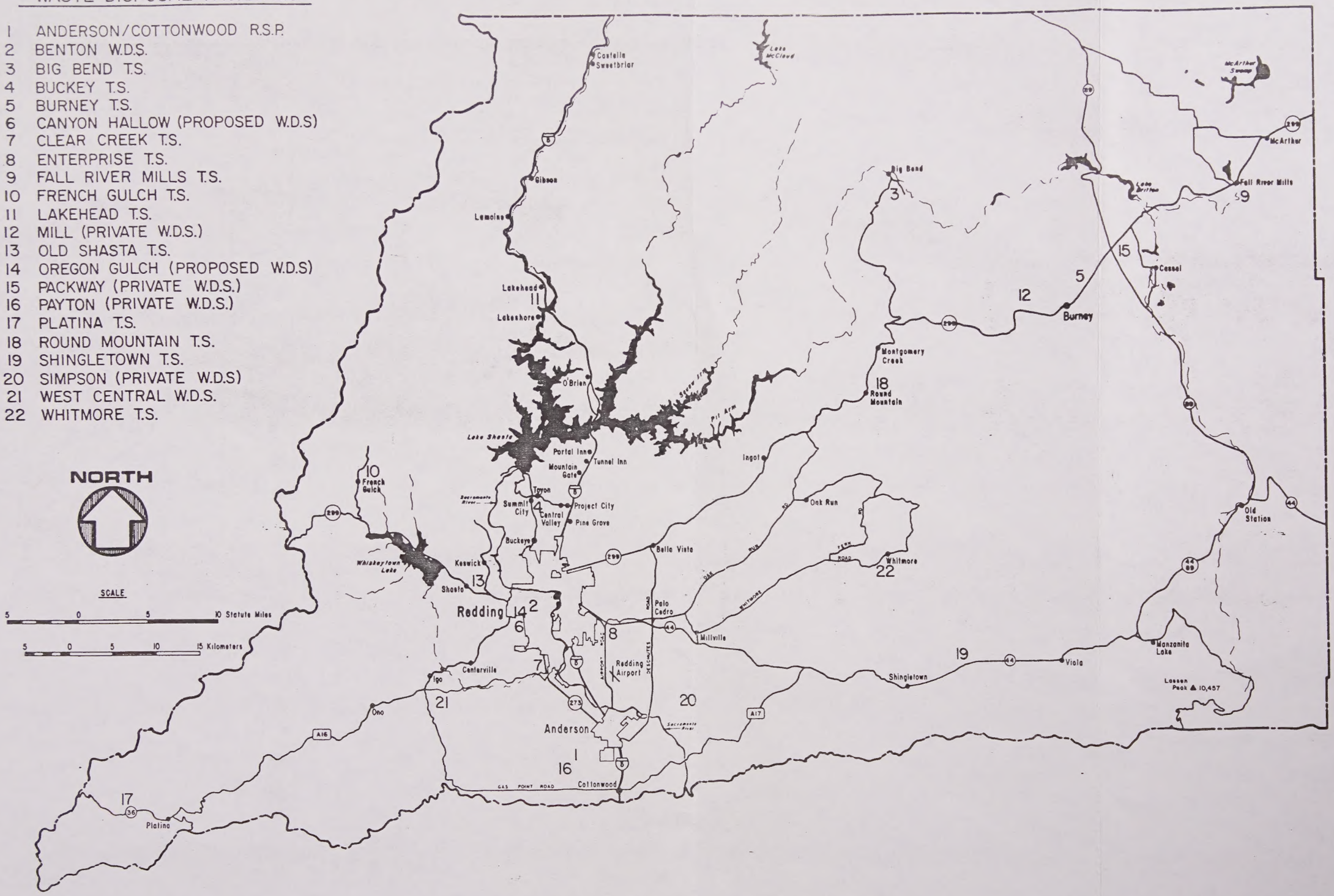
An appropriate County policy for community recreation must recognize these differences among communities. This policy must also realistically respond to the fiscal constraints on County government's ability to act as a recreation provider. Most importantly, this policy must recognize the need to preserve options for meeting the future community recreation needs of County residents. As the County continues to grow, opportunities now available to meet these needs will be foreclosed or available at a substantially higher cost.

LEGEND: R.S.P.-REGIONAL SEWERAGE PONDS ; W.D.S.-WASTE DISPOSAL SITE ; T.S.-TRANSFER STATIONS

FIGURE PF-1

WASTE DISPOSAL FACILITIES

1 ANDERSON/COTTONWOOD R.S.P.
2 BENTON W.D.S.
3 BIG BEND T.S.
4 BUCKEY T.S.
5 BURNEY T.S.
6 CANYON HALLOW (PROPOSED W.D.S)
7 CLEAR CREEK T.S.
8 ENTERPRISE T.S.
9 FALL RIVER MILLS T.S.
10 FRENCH GULCH T.S.
11 LAKEHEAD T.S.
12 MILL (PRIVATE W.D.S.)
13 OLD SHASTA T.S.
14 OREGON GULCH (PROPOSED W.D.S)
15 PACKWAY (PRIVATE W.D.S.)
16 PAYTON (PRIVATE W.D.S.)
17 PLATINA T.S.
18 ROUND MOUNTAIN T.S.
19 SHINGLETOWN T.S.
20 SIMPSON (PRIVATE W.D.S)
21 WEST CENTRAL W.D.S.
22 WHITMORE T.S.



SHASTA COUNTY

An important tool available to County government in meeting community recreation needs is provided by Section 66477 of the Subdivision Map Act. This section authorizes counties and cities to require the dediction of land, the payment of in lieu fees, or a combination of both, for park or recreation purposes as a condition of the approval of a final or parcel map. Only fees may be required in subdivisions containing 50 parcels or less and there are time limitations on their use. Dedicated parklands and parklands purchased with in lieu fees must be available for the use of residents of the subject subdivision, but these lands need not be located within the subdivision. There is also no requirement that these parklands be reserved for the exclusive use of the residents of the subdivision. If a particular subdivision is located adjacent to parklands, the in lieu fee may be used to purchase parklands in other areas of the community in order to maintain the proper balance between the number of community residents and the amount of available parklands. Although a city or county may require the dedication of parkland or fees under Section 66477, they must be conveyed or paid directly to the local public agency which provides park and recreation services to the community within which the proposed subdivision will be located, if said agency elects to accept the land or fees. A local public agency includes special districts and school districts. If, for example, a special district elects to accept dedicated parklands, the district, not the city or county imposing the dedication requirement, assumes responsibility for its maintenance. Section 66477 of the Subdivision Map Act requires that it be implemented by local ordinance establishing definite standards for the determination of the size of the dedicated park area and the amount of the in lieu fee.

In order to adequately provide for the existing and future community recreation needs of its residents living in unincorporated urban areas in a manner consistent with their needs and the fiscal capabilities of County government, Shasta County should take the following action. Parklands dedications or in lieu fees should be required as a condition of approval of all final or parcel maps for land divisions occurring in areas designated by the Community Development Element as urban or suburban residential development. In the interest of uniformity, the existing County standards should be replaced with those applied to urban/suburban development occurring in incorporated areas, specifically the standards used by Redding. Parklands dedication and fee payment will be required only if a local public agency recreation provider, such as a school or special district, agrees to accept and maintain them.

It is anticipated that initially dedicated parklands will be developed as grassy or turfed playfields without lights, fences, or recreational equipment of any sort. Discussions with recreation officials in the unincorporated urban areas of the County indicate that the maintenance costs of this type of facility are relatively low and manageable. But looking beyond the initial development and use of this type of facility, it preserves the option for future, more intensive recreation development as the community grows and recreation demand intensifies. At some future time, there may be sufficient support for an assessment district or some other mechanism for financing recreation facility improvements, but these opportunities will

be limited if parkland is unavailable or available only at a high price reflecting the development of the surrounding community. Requiring parkland and fee dedications now will provide valuable, maintainable recreation facilities for the present while reserving the opportunities for more intensive development in the future.

Schools

In recent years funding for new school facilities has diminished. As a result, funds for the construction of new classroom facilities may not be available when new development occurs, eventually resulting in school overcrowding. A method does exist at the local level, however, for obtaining funds for school expansion. Section 65970 of the Government Code provides that if a finding that school overcrowding exists, the County may require from new development the dedication of land, fees in lieu of, or a combination of both for classroom facilities. Participation by the County in this program will help provide needed new school facilities that otherwise may not be available.

In the 1983-1984 school year, the following school districts were classified as overcrowded: Grant, Shasta Lake Union, Cascade Union, and Columbia.

Due to long delays in receiving funding for new school facilities, school districts must project their future needs. Much of the growth within school districts will be determined by land use planning which is under the jurisdiction of the County. Therefore, the County is the logical entity to work with the school districts in projecting school needs for the unincorporated areas. The General Plan should establish a framework for school facility planning.

OBJECTIVES

PF-1 Development of a Countywide mechanism for managing the water resources of Shasta County while ensuring that local community desires regarding water service are respected. Countywide water supply options should be shared on a Countywide basis, and adequate supplies and quality of water should be available to serve development projected for the planning period.

PF-2 Encouragment of water conservation in all new development through the use of measures which result in the more efficient use of water.

PF-3 Achievement of an improved understanding of the ground water resources of Shasta County.

PF-4 Development of a comprehensive long-term plan for wastewater treatment within the County, coordinated with community development objectives and designed to provide this service in a manner making the most effective use of public resources.

PF-5 Achievement of an improved understanding of the opportunities and constraints governing the use of on-site wastewater treatment systems, both conventional and alternative, in Shasta County.

PF-6 Develop the Shasta County solid waste program in accordance with the adopted Solid Waste Management Plan.

PF-7 Development of a land use pattern which can be adequately served with community facilities such as schools, libraries, and community recreation.

POLICIES

PF-a The County shall take appropriate actions for achieving objective PF-1. Every opportunity for interjurisdictional and interagency cooperation shall be encouraged to this end.

PF-b Shasta County shall take appropriate actions for achieving objective PF-4. Every opportunity for interjurisdictional and interagency cooperation in other areas shall be encouraged to this end.

PF-c Shasta County shall permit experimentation with "alternative" wastewater treatment technologies on a limited and carefully controlled basis, including advance provision establishing what public or private entity will be responsible in the event of failure, to determine which systems are feasible.

PF-d Shasta County shall take actions required to implement the Solid Waste Management Plan.

PF-e Shasta County should provide for septic tank disposal facilities in eastern Shasta County.

PF-f Shasta County may require the dedication of parklands or the payment of in lieu fees in accordance with County development standards in the areas of the County designated for urban/suburban development by the Community Development Element. Dedication shall be required only if the lands and fees so obtained will be maintained and administered by a local public agency which provides community recreation services.

PF-g The locations of existing and proposed large-scale community recreation facilities shall be designated on General Plan maps as Natural Resources Protection Parklands (N-P).

PF-h Shasta County should enter into cooperative planning arrangements with the County Superintendent of Schools for the exchange of data, the preparation of coordinated student enrollment projections, and the development of facility plans responsive to the growth of the County.

PF-i Public uses (e.g. schools, parks, waste disposal sites) and public utilities (e.g. substation, transmission lines) whose site specific locations often cannot be identified in advance by the General Plan may be permitted throughout the County to serve the public need. Appropriate zoning on site specific locations will be determined in response to the identified need as it occurs. Solid waste disposal facilities shall be conditionally permitted to ensure that the site is compatible with adjacent land uses. Surrounding land uses, to the extent feasible, shall be regulated to avoid incompatibility with the solid waste disposal facility.

RESOLUTION NO. 84-11

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SHASTA TO ADOPT THE REVISED SHASTA COUNTY GENERAL PLAN.

WHEREAS, the Board of Supervisors held public hearings in May and June of 1982 and June of 1983, and has received hundreds of written and verbal citizen and public agency comments, and all of the comments have been considered and many are incorporated in the Plan; and

WHEREAS, the Planning Commission has conducted 15 study sessions and participated in numerous joint study sessions with the Board of Supervisors to review and develop recommendations on the Plan; and the Board has considered these recommendations and most are incorporated into the Plan; and

WHEREAS, the Board of Supervisors has held thirteen (13) study sessions to review the Planning Commission's recommended General Plan.

WHEREAS, the Board of Supervisors has certified the Final Environmental Impact Report (EIR), including the Addendum to the EIR for the General Plan which identifies one significant effect on the environment regarding air quality (ozone); and

WHEREAS, the Board of Supervisors has adopted specific environmental findings for the identified significant effect.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of the County of Shasta hereby adopts the Shasta County General Plan which includes Volume I, the General Plan, and Volume 2, Appendices to the General Plan (Exhibits A and B), and the General Plan Maps including ten planning area maps, 21 community plan maps and the South Central Region circulation map, (Exhibits C-1 through C-32) all of which are on file in the Planning Department.

BE IT FURTHER RESOLVED that the Planning Director is authorized and directed to make changes in the Plan text and maps as may be necessary to effectuate the action of the Board of Supervisors including typographical corrections to the text and line corrections on the maps.

BE IT FURTHER RESOLVED that the previous General Plan and all of its Community Plans and General Plan amendments are hereby repealed.

BE IT FURTHER RESOLVED that whenever the word "shall" is used in an objective or policy of the General Plan text and the implementation of that objective or policy is dependent on the availability of County funds, then the objective or policy implementation will be considered limited by and subject to the availability of funding through the County budget process.

BE IT FURTHER RESOLVED that until the Zoning Plan Ordinance is updated to be consistent with the General Plan, it is the policy of the Board of Supervisors to require every project to be consistent with the Plan as specified by Section 4371.A.8 of the Shasta County Ordinance Code.

DULY PASSED this 10th day of January, 1984 by the following vote:

AYES: Supervisors Swendiman, Strange, Caton, Maddox, Peters
NOES: None
ABSENT: None
ABSTAIN: None

/s/ John Strange
JOHN STRANGE, Chairman
Board of Supervisors
County of Shasta
State of California

ATTEST:

/s/ Ann Reed
ANN REED, County Clerk
and ex-officio Clerk of the
Board of Supervisors
County of Shasta
State of California

This instrument is a correct copy of the original on file in this office.

ATTEST: JAN 10 1984

ANN REED
COUNTY CLERK AND EX-OFFICIO CLERK OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SHASTA, STATE OF CALIFORNIA
BY Pat Rodick DEPUTY

ACKNOWLEDGEMENTS

Contributions from the following individuals during the preparation of the Shasta County General Plan (Draft) have been greatly appreciated.

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John Strange, Chairman
John Caton
Don Maddox
Pete Peters
Steve Swendiman

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Bob Bosworth
Russ Reiner
Ken Murray
Don Prielipp

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Denis Cook, Planner
Paul Bolton, Planner
Don Smith, Planner
Gwen Schwalbe, Planning Drafting Technician
Jim Thompson, Planning Drafting Technician
June Arnold, Secretary/Steno III
Kim King, Typist

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County Fire Warden
Gary Harlow, Unit Forester

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Dave Frank, Deputy County Counsel

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Tony Estacio, Office Services Manager

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Phil Browning and Joan Gannon
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Velma Smith and Arthur Trenerry
Clear Creek CSD

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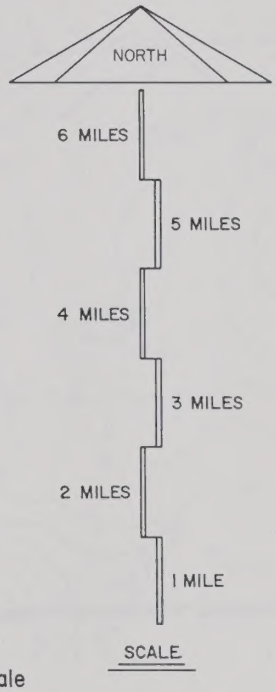
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Macil Bargas
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Lennart Swenson
Johanna Trenerry
Bruce Webb
Carl Weider
Stanley Weider
Doug Wickizer
John P. Wilson
Jane Wittman
Dan Woolery
Vivian Wright

GENERAL PLAN MAP LEGEND

- Planning Area Boundary
- NRA, National Park, or Wilderness Boundary
- City Boundary
- Community Plan Boundary
- Significant River or Creekside Corridor
- Proposed Reservoir

CIRCULATION

- Principal Arterial
- Arterial
- Proposed Arterial
- Collector
- Proposed Collector



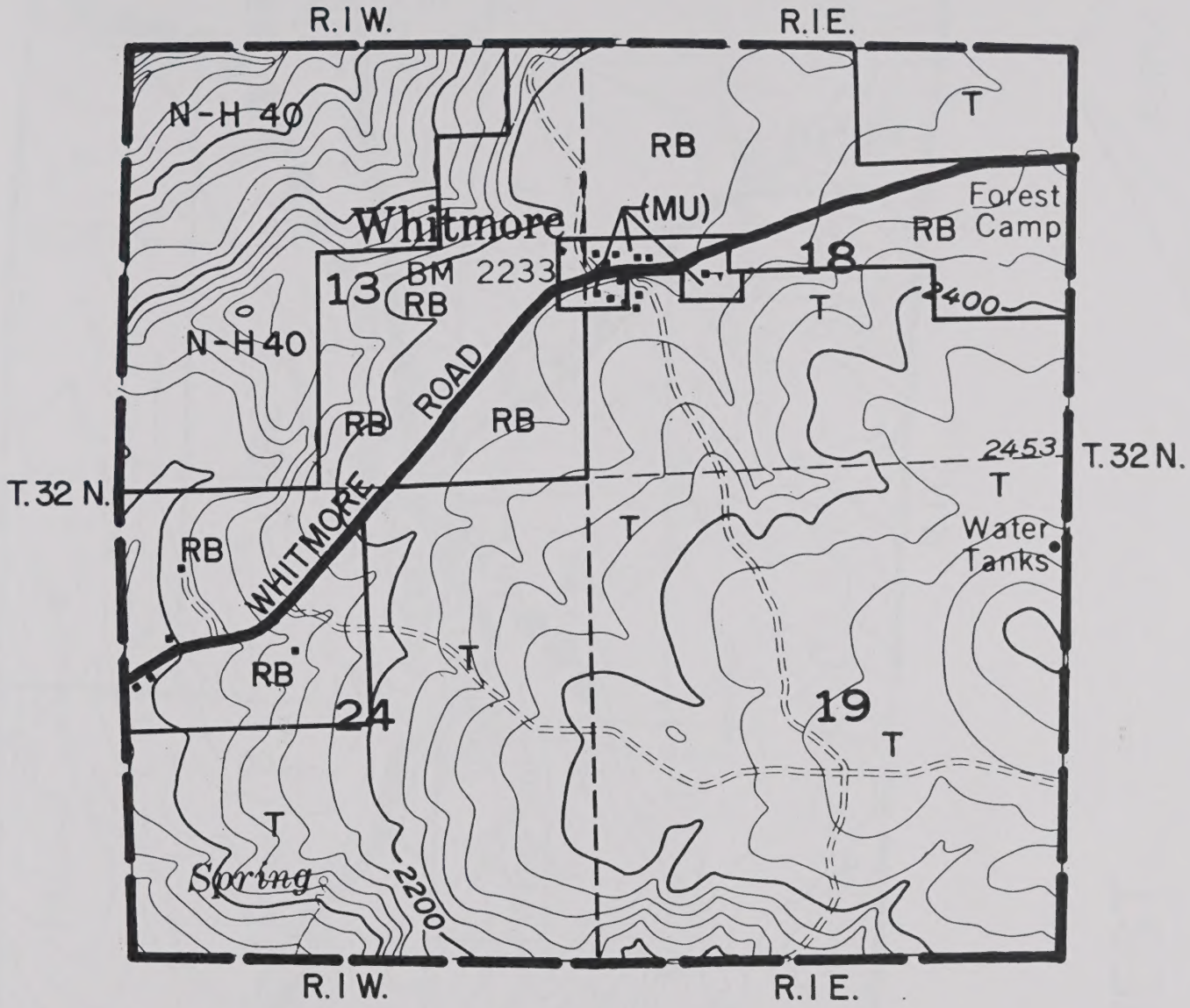
BEROL PRISMACOLOR NUMBER	SYMBOL	NATURAL RESOURCES PROTECTION:
8911	N-O	Open Space
8911	N-P	Park
8911	N-H	Habitat Resource
8911	N-R	Recreation Resource
8909	T	Timber
8913	A-C	Agricultural Croplands
8948	A-G	Agricultural Grazing
8939	A-cg	Agricultural Small Scale Cropland / Grazing
8932	M	Mineral Resource
8918	UR	Urban Residential
8942	SR	Suburban Residential
8915	RA	Rural Residential A
8914	RB	Rural Residential B
8922	C	Commercial
8928	MU	Mixed Use
8972	I	Industrial
8913		Public Land
8903	PF	Public Facility
	Ⓡ	Commercial Recreation
	C	Clustering

(EASTERN UPLAND)

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SHASTA COUNTY, CA.

WHITMORE

RURAL COMMUNITY CENTER

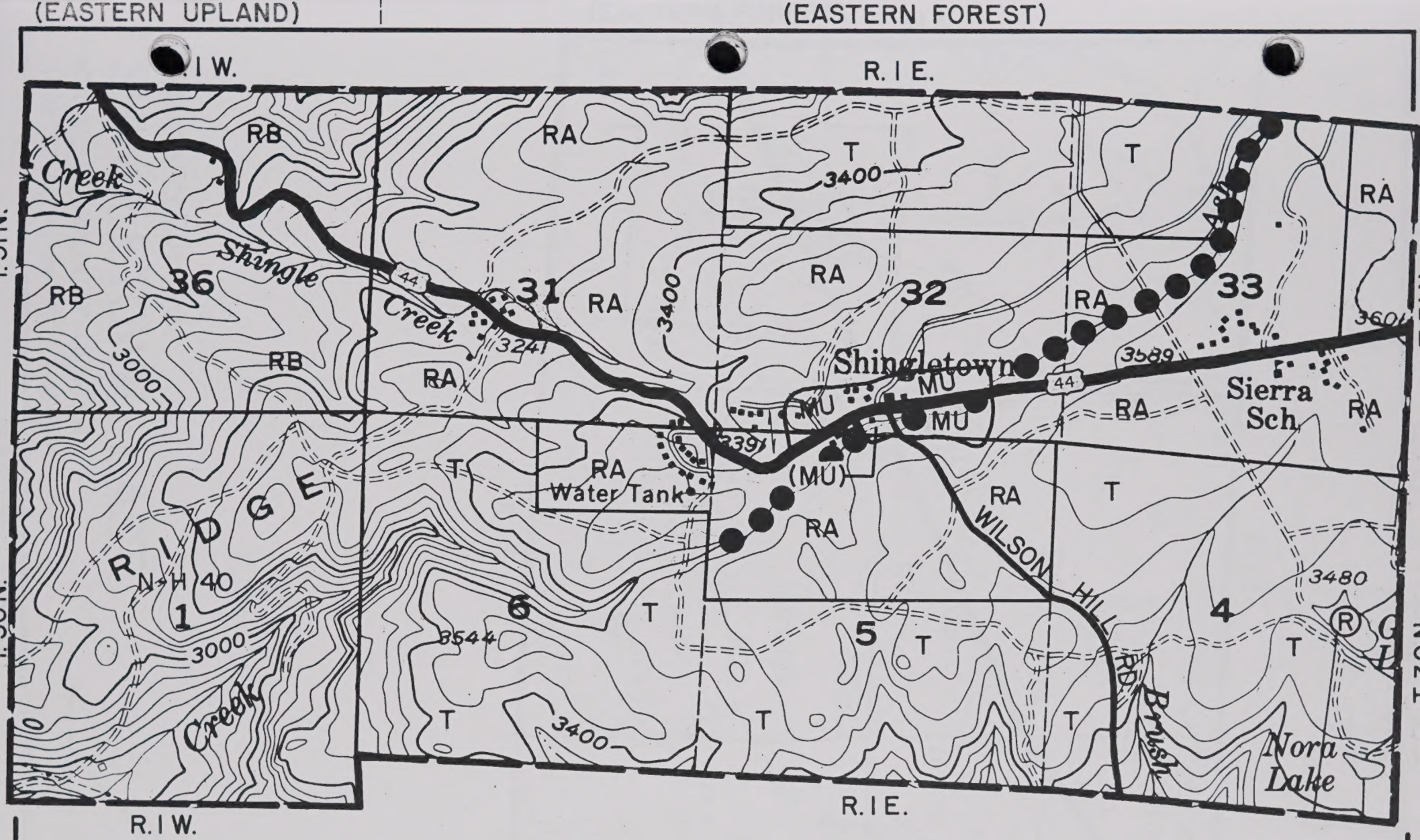
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SHASTA COUNTY, CA.

SHINGLETOWN - WEST

RURAL COMMUNITY CENTER

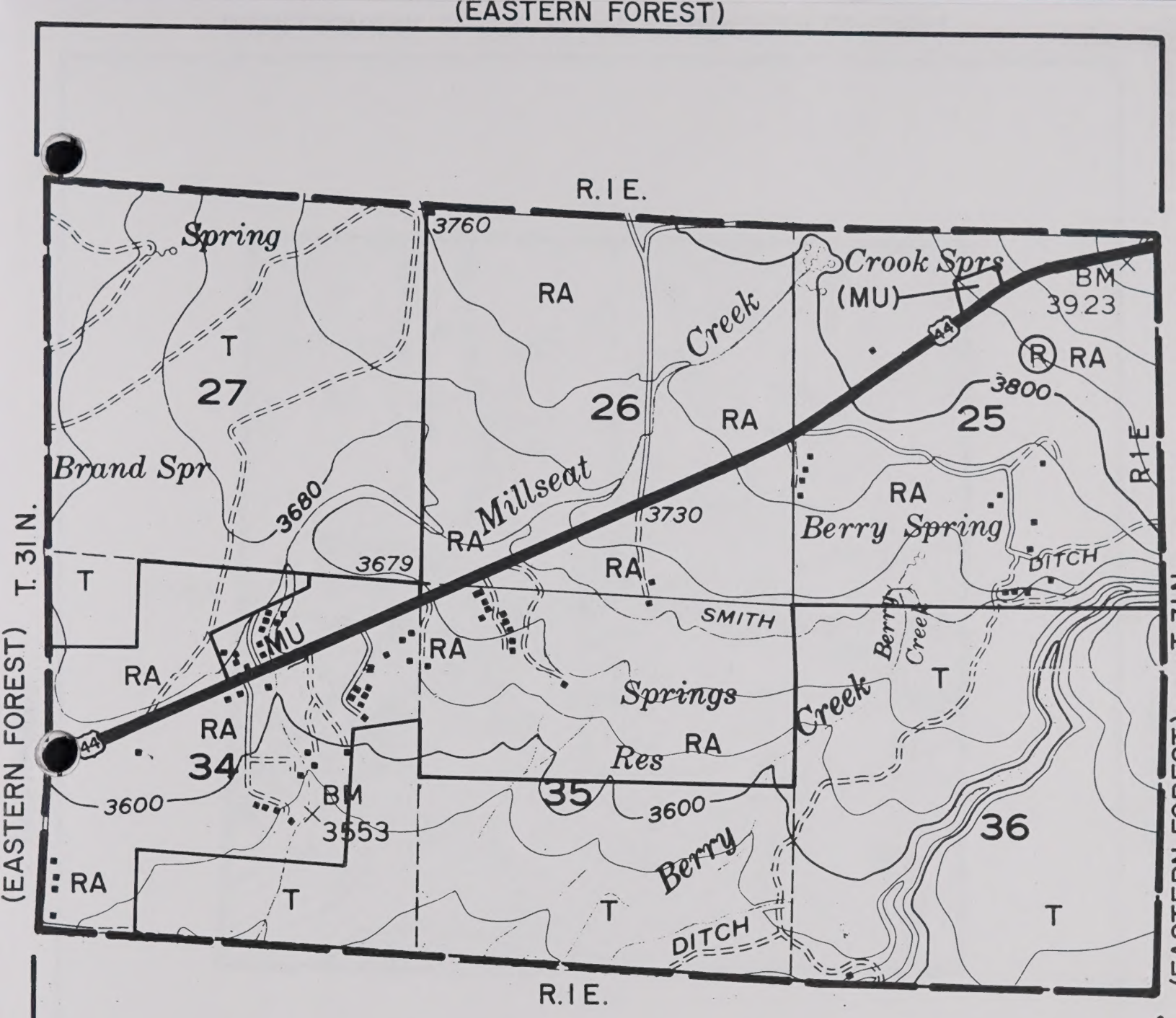
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SHASTA COUNTY, CA.

SHINGLETOWN - EAST

RURAL COMMUNITY CENTER

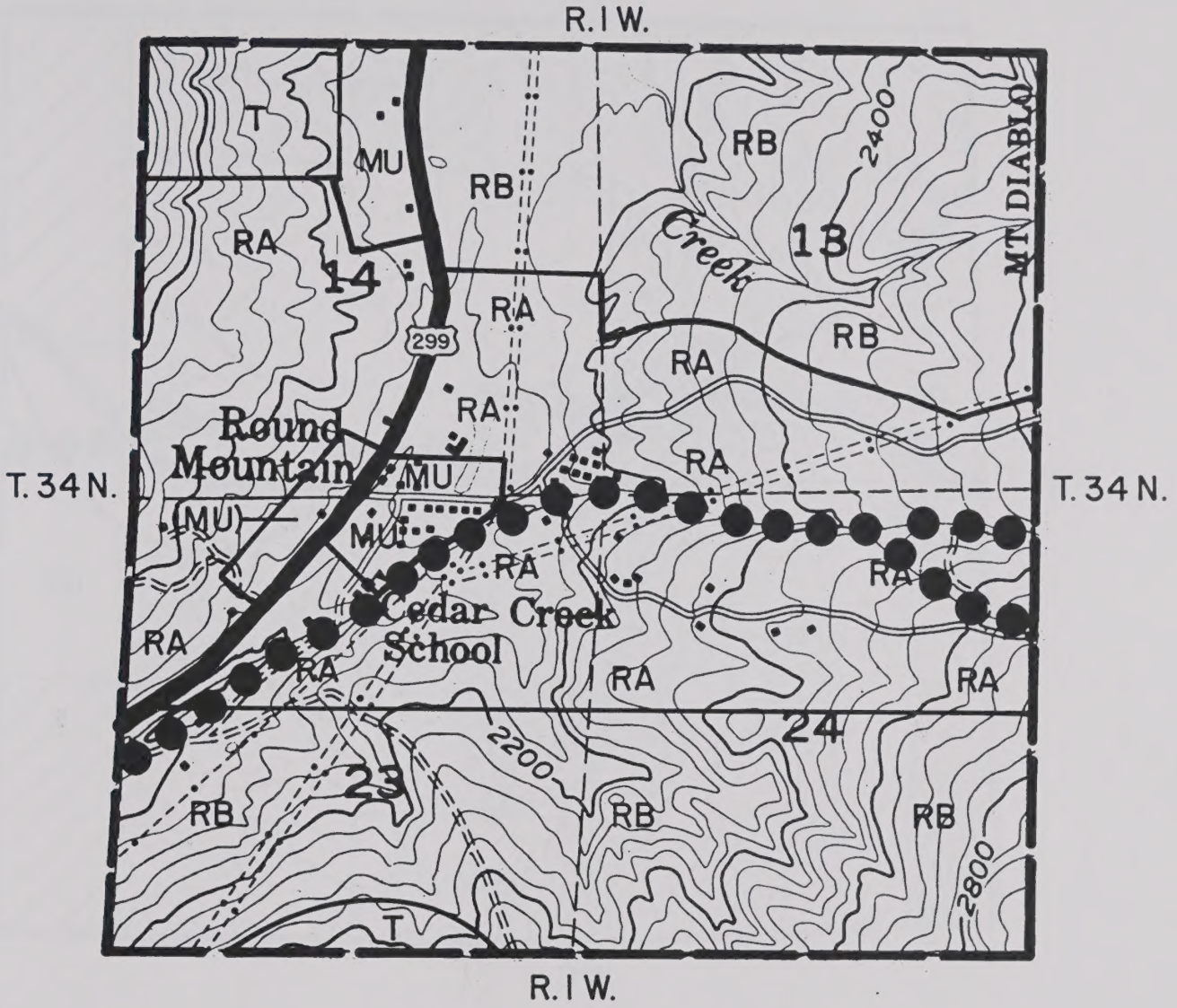
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(EASTERN FOREST)

(MONTGOMERY CREEK RURAL COMMUNITY CENTER)



G.P.A. 2-88 B.O.S. 3-15-88

(BIG BEND)

(BIG BEND)

SHASTA COUNTY, CA.

ROUND MOUNTAIN

RURAL COMMUNITY CENTER

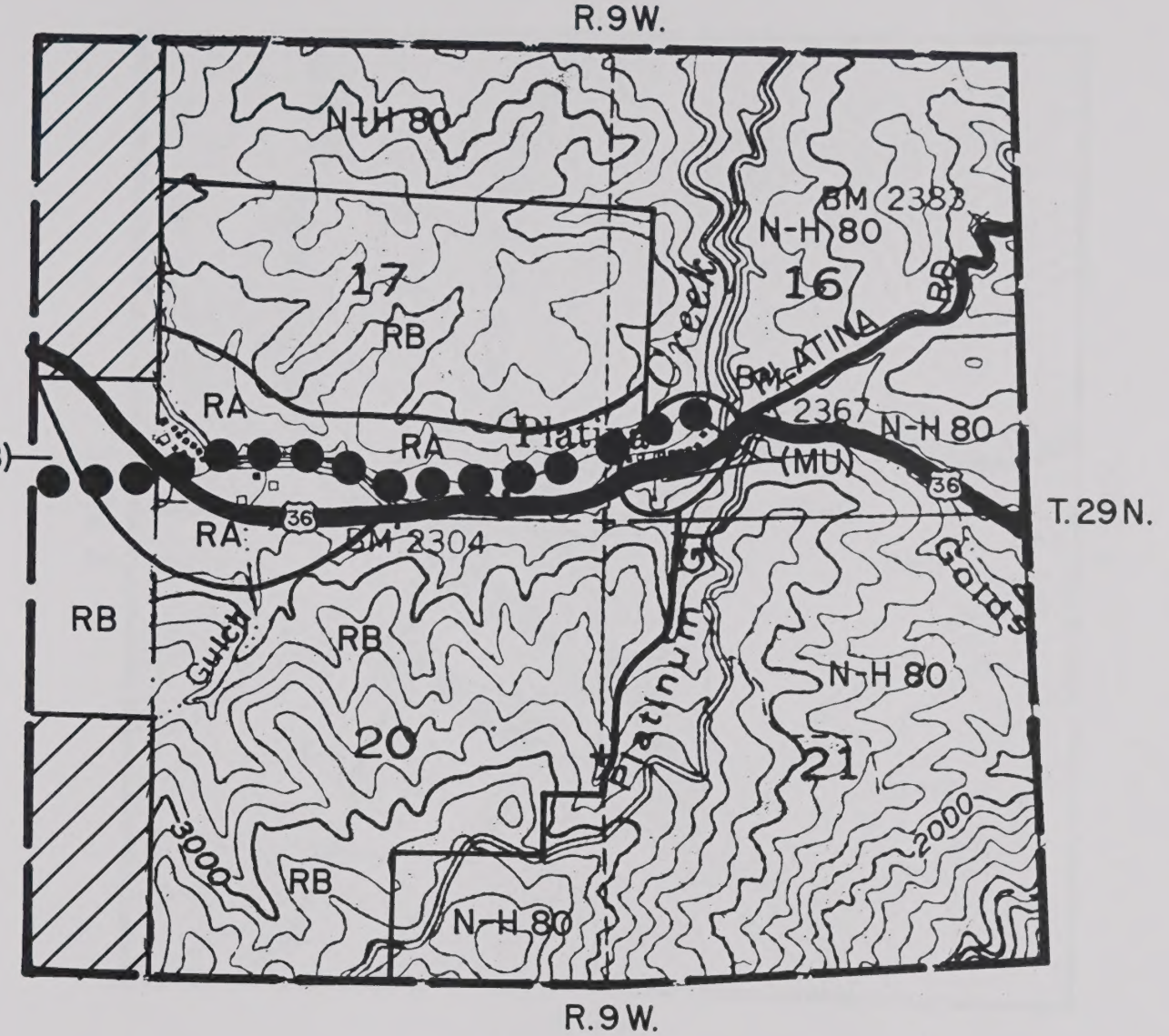
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SHASTA COUNTY, CA.

PLATINA

RURAL COMMUNITY CENTER

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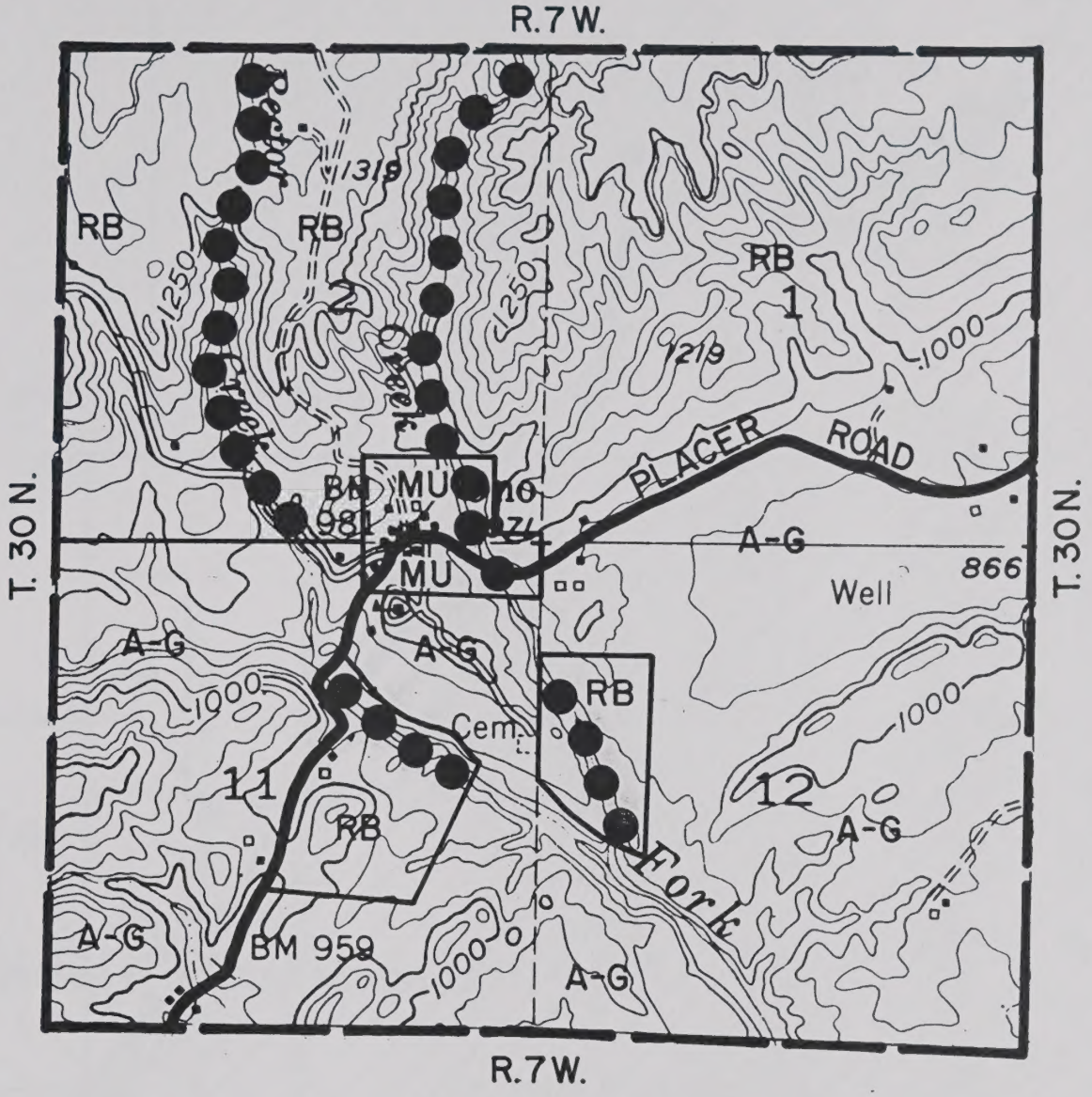
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SHASTA COUNTY, CA.

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RURAL COMMUNITY CENTER

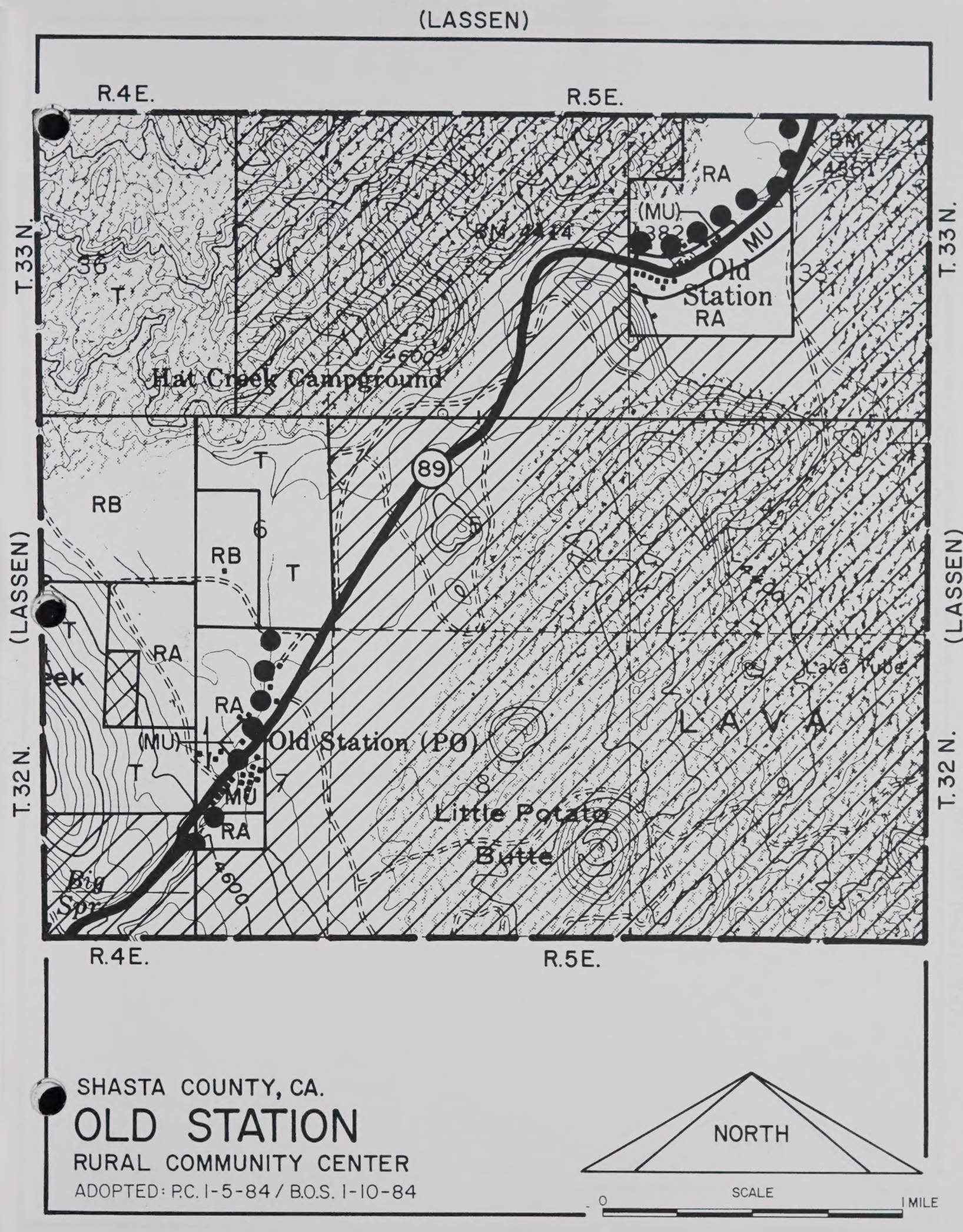
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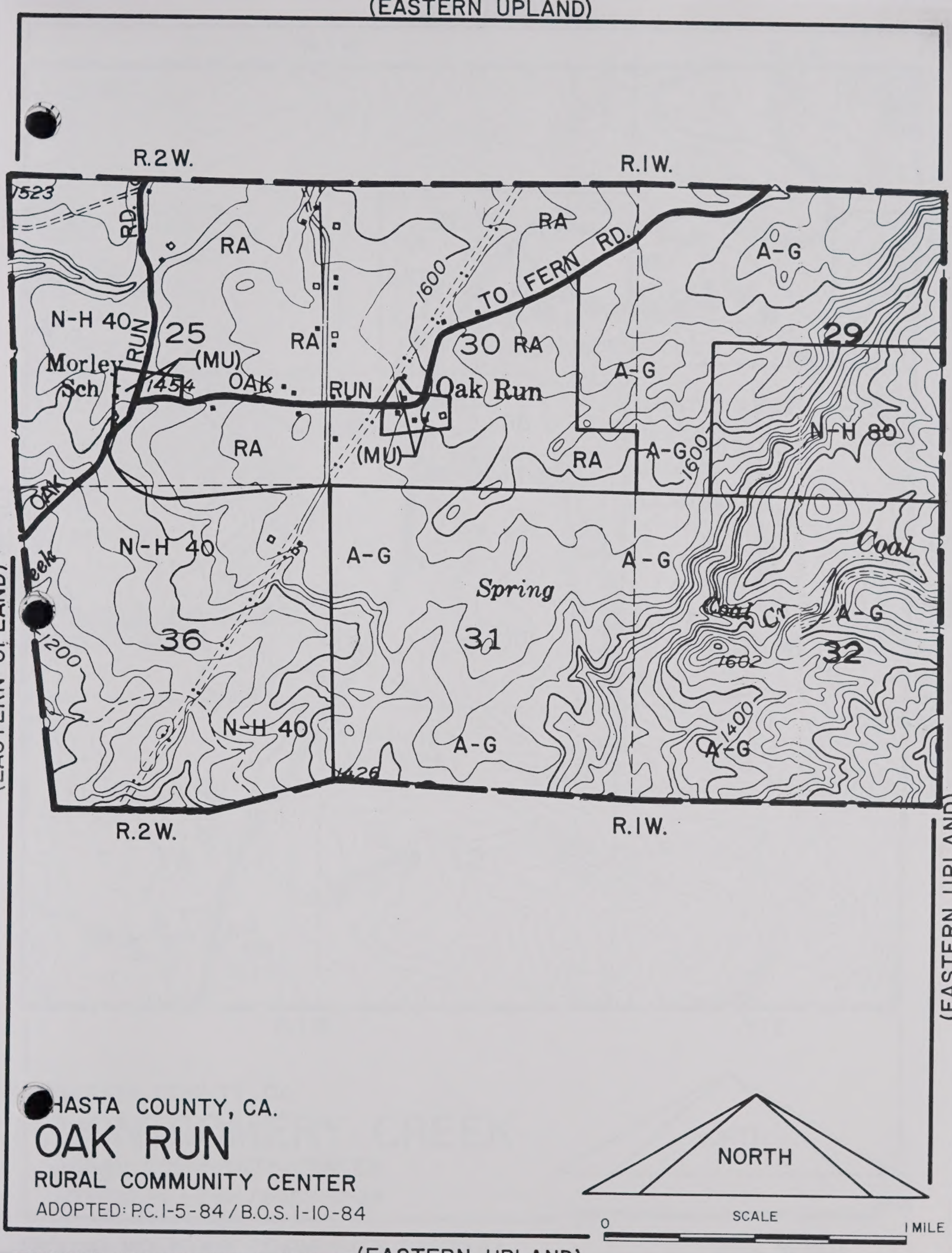
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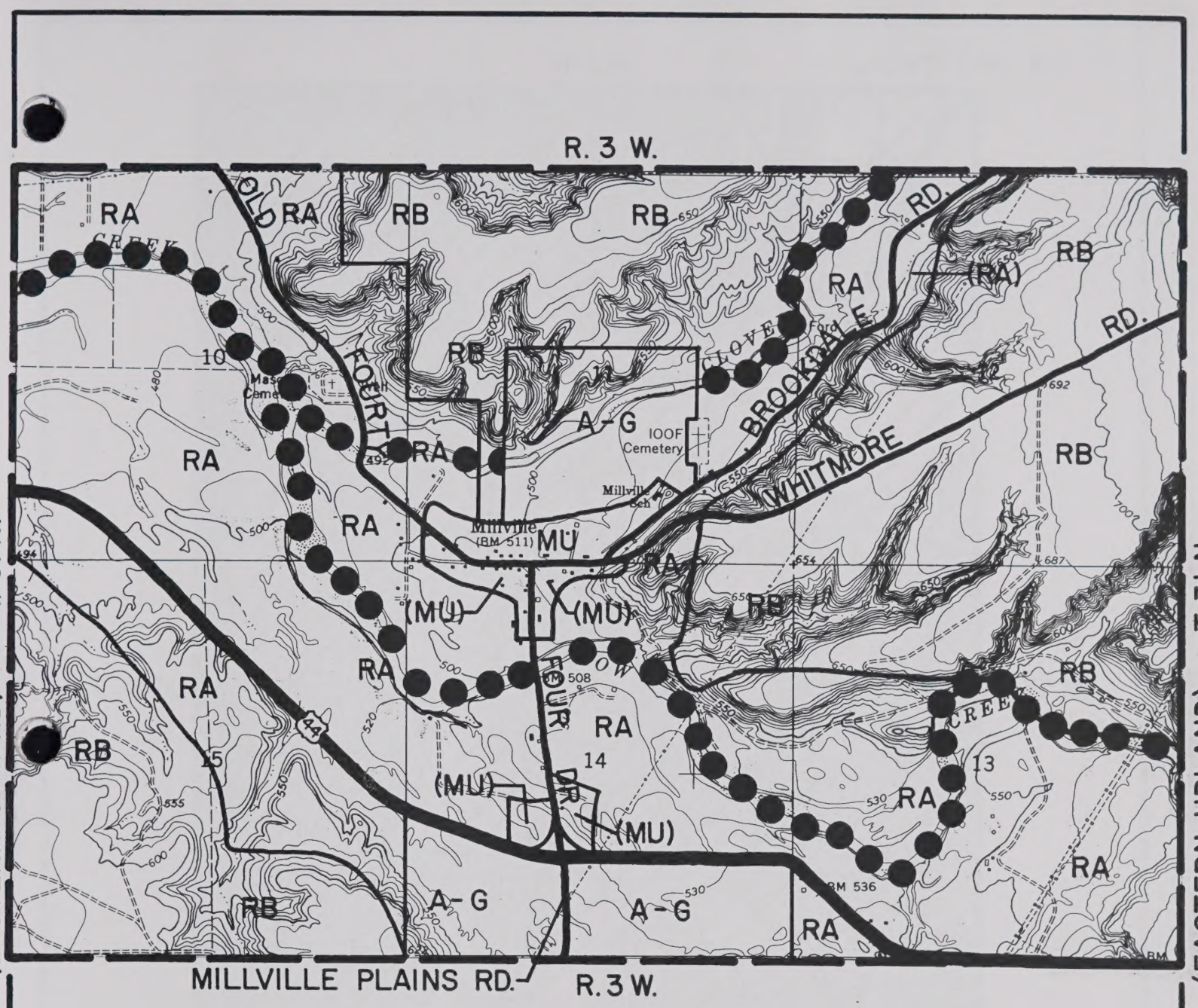
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(LASSEN)
R.4E.
R.5E.
T.33N.
T.32N.
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RA
(MU)
MU
BM 4361
BM 4414
Old Station
RA
Hat Creek Campground
89
RB
RB
T
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T
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RA
RA
(MU)
Old Station (P.O.)
MU
RA
Lava Tube
L A V A
Little Potato Butte
Big Spr
SHASTA COUNTY, CA.
OLD STATION
RURAL COMMUNITY CENTER
ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84
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(EASTERN UPLAND)
R.2W.
R.1W.
RA
A-G
TO FERN RD.
1600
N-H 40
25
(MU)
Morley Sch
OAK RUN
1454
30 RA
29
Oak Run
N-H 80
OAK
36
31
32
Spring
Coal
Coal Ct
1602
1400
1200
1426
(EASTERN UPLAND)
(EASTERN UPLAND)
SHASTA COUNTY, CA.
OAK RUN
RURAL COMMUNITY CENTER
ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84
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(BIG BEND)
R.1W.
R.1E.
T.35N.
T.34N.
(BIG BEND)
2200
T
T-2400
Gravel Pit
35
36
31
RA
299
2420
(MU)
BM
2140
Creek
Montgomery Creek
RB
Montgomery Falls
(RA)
INDIAN RESERVATION
MONTGOMERY CREEK INDIAN RANCHERIA
2600
6
2847
2401
2
1
2400
MERIDIAN
FENDERS FERRY RD.
BM 2181
Halcumb Cemetery
11
12
7
Mill
Creek
2200
BM 2117
2800
SHASTA COUNTY, CA.
MONTGOMERY CREEK
RURAL COMMUNITY CENTER
ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84
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(ROUND MOUNTAIN COMMUNITY CENTER)
(BIG BEND)

(EASTERN UPLAND)



SHASTA COUNTY, CA.

MILLVILLE

RURAL COMMUNITY CENTER

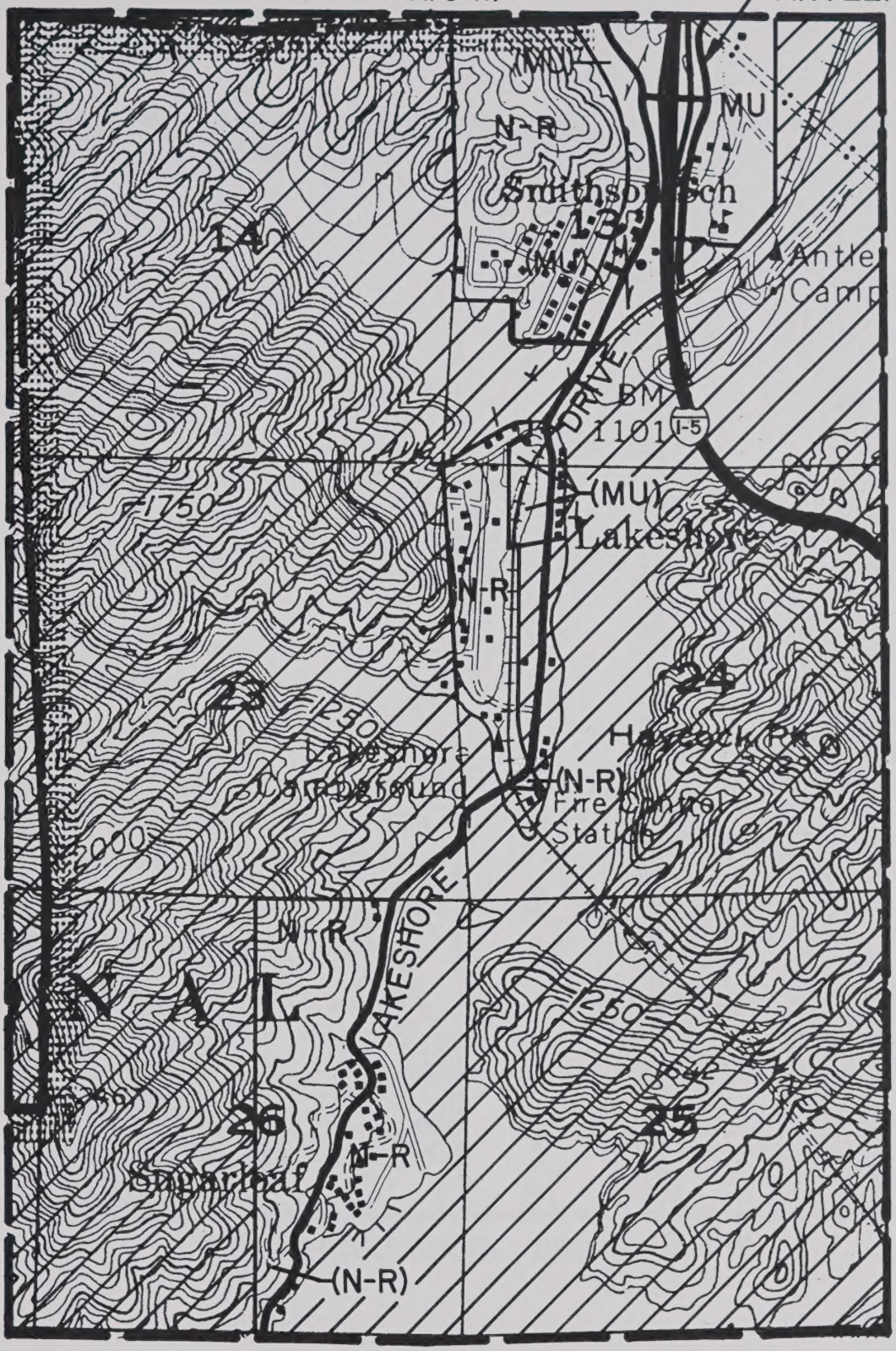
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(EASTERN UPLAND)

(SACRAMENTO CANYON) (LAKEHEAD COMMUNITY CENTER)



(SACRAMENTO CANYON)

(SACRAMENTO CANYON)

SHASTA COUNTY, CA.

LAKESHORE

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

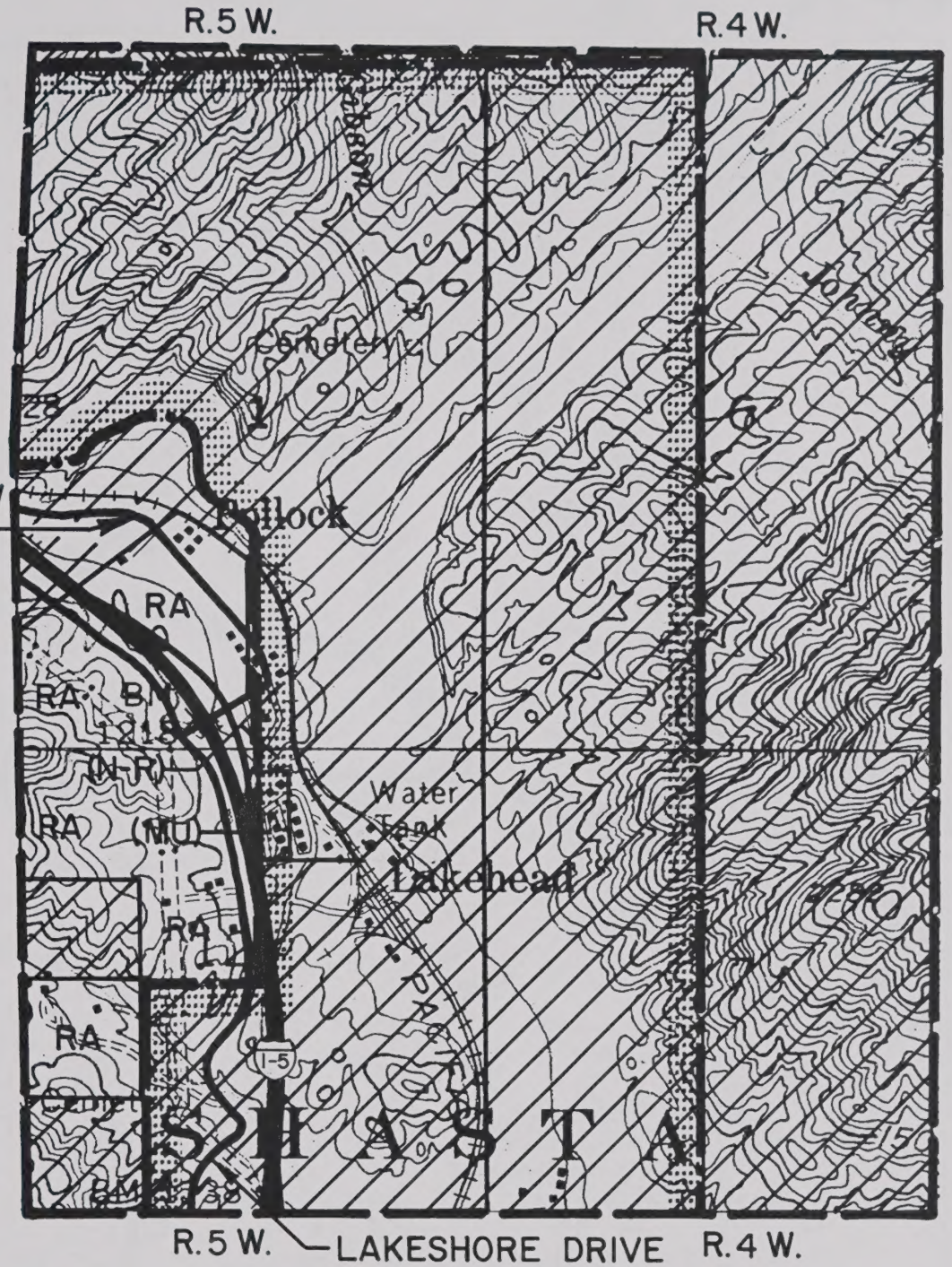
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(SACRAMENTO CANYON)

(SACRAMENTO CANYON)



(SACRAMENTO CANYON)

(SACRAMENTO CANYON)

SHASTA COUNTY, CA.

LAKEHEAD

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

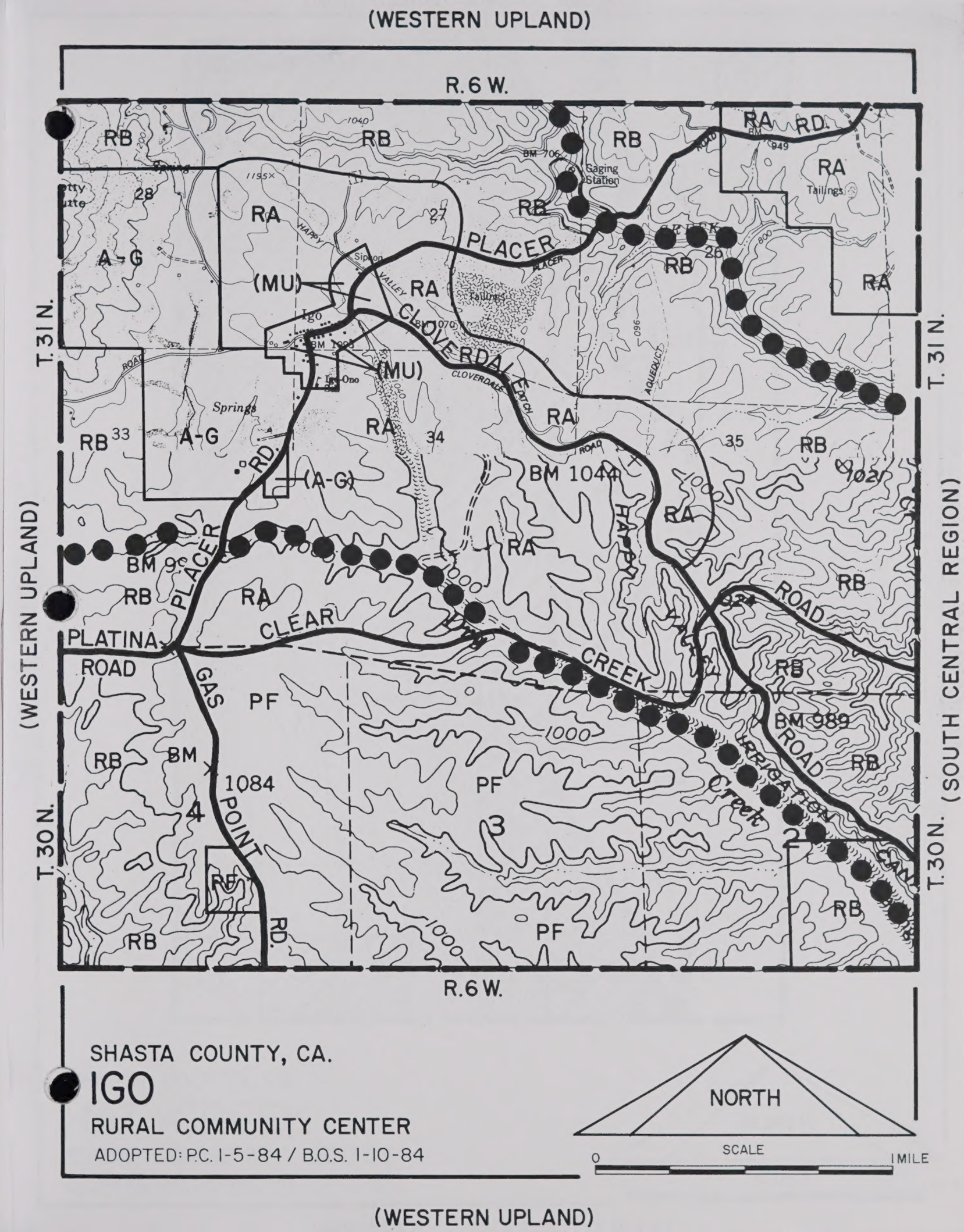
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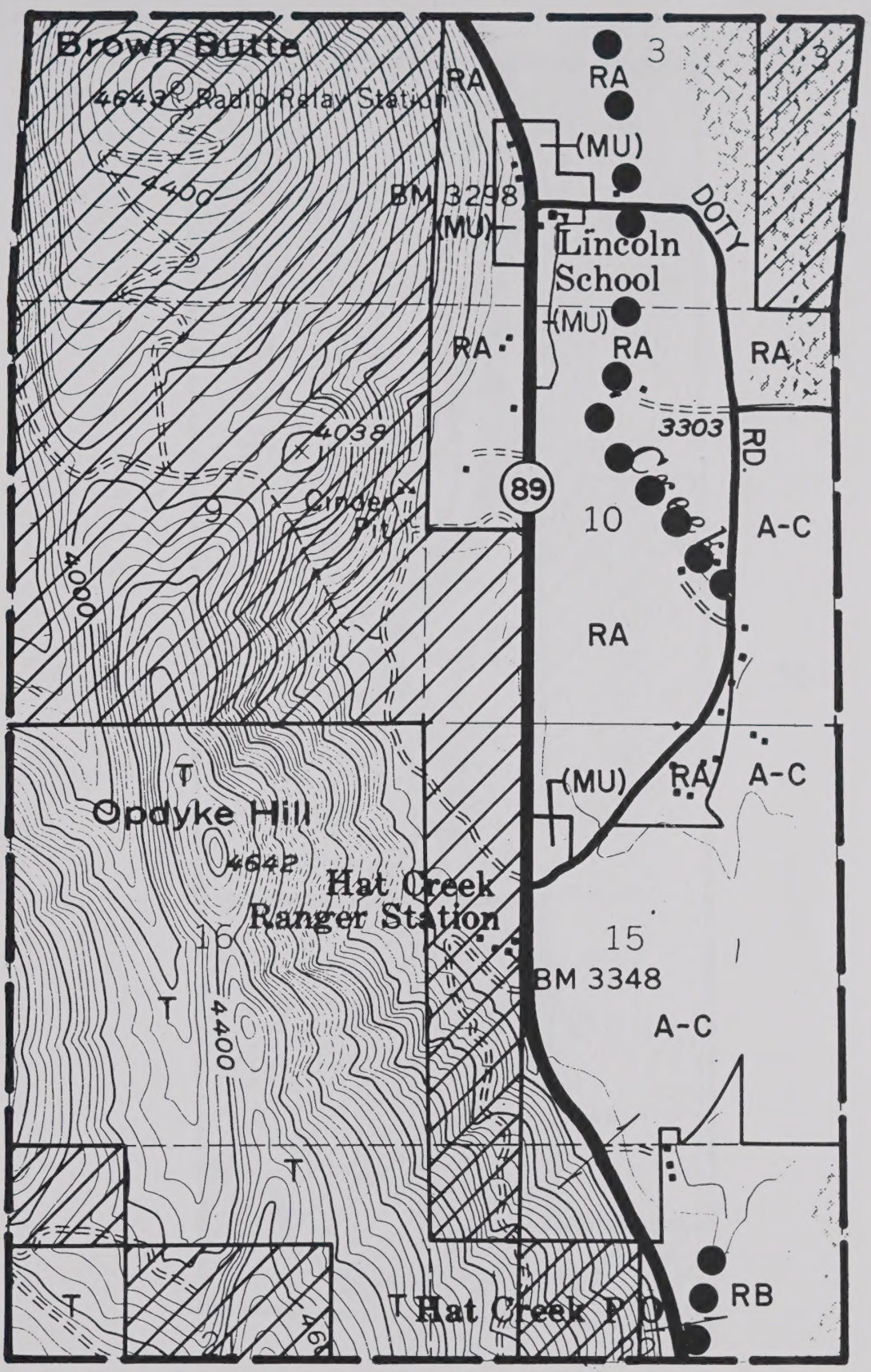
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(LAKESHORE COMMUNITY CENTER)

(SACRAMENTO CANYON)


(WESTERN UPLAND)
R.6 W.
T.31 N.
T.30 N.
(WESTERN UPLAND)
(SOUTH CENTRAL REGION)
RB
RA
A-G
(MU)
(A-G)
PF
PLACER
CLOVERDALE
PLATINA
ROAD
CLEAR
CREEK
GAS
POINT
RD.
HAPPY
VALLEY
Igo
Gaging Station
Tailings
Springs
BM 1044
BM 989
BM 1084
1000
SHASTA COUNTY, CA.
IGO
RURAL COMMUNITY CENTER
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NORTH
SCALE
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1 MILE

(NORTHEAST SHASTA COUNTY)



(NORTHEAST SHASTA COUNTY)

(NORTHEAST SHASTA COUNTY)

SHASTA COUNTY, CA.

HAT CREEK

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

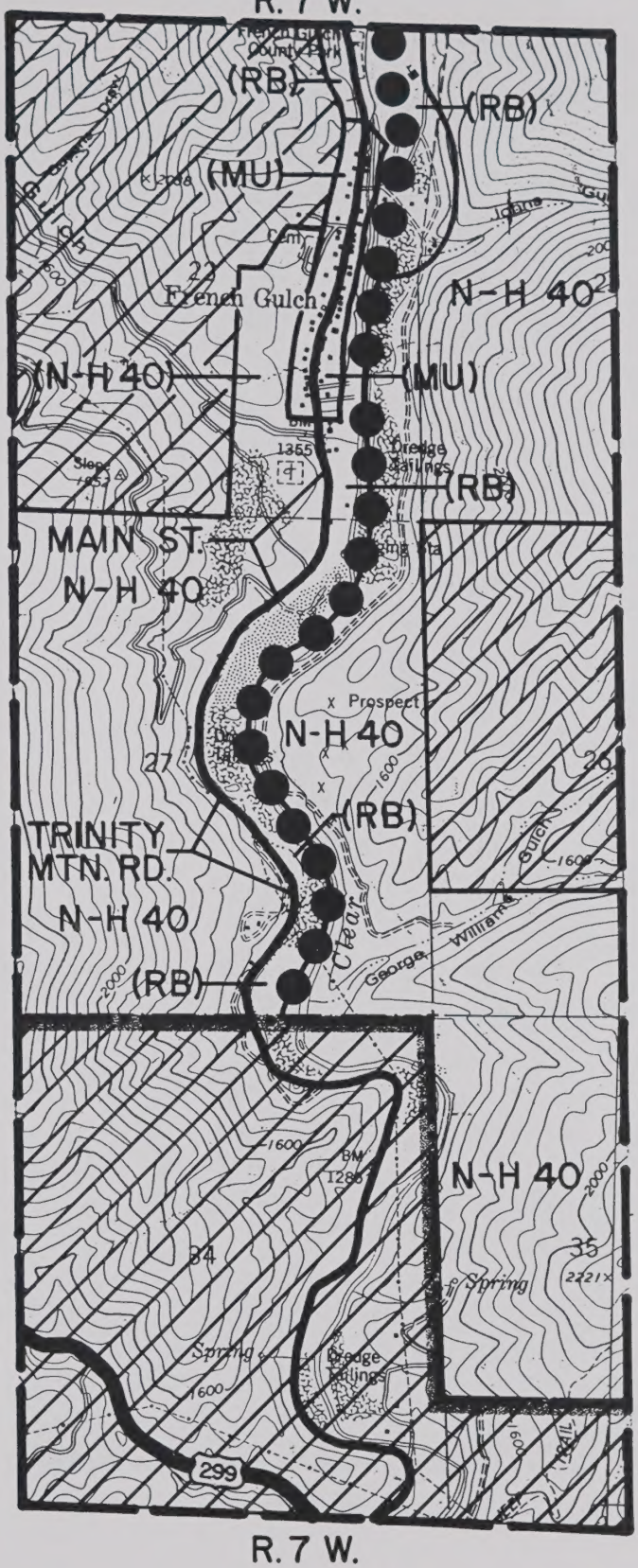
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(NORTHEAST SHASTA COUNTY)

(FRENCH GULCH) (FRENCH GULCH NORTH COMM. CENTER)

R. 7 W.



T. 33 N.

T. 33 N.

R. 7 W.

(FRENCH GULCH)

(FRENCH GULCH)

SHASTA COUNTY, CA.

FRENCH GULCH - SOUTH

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

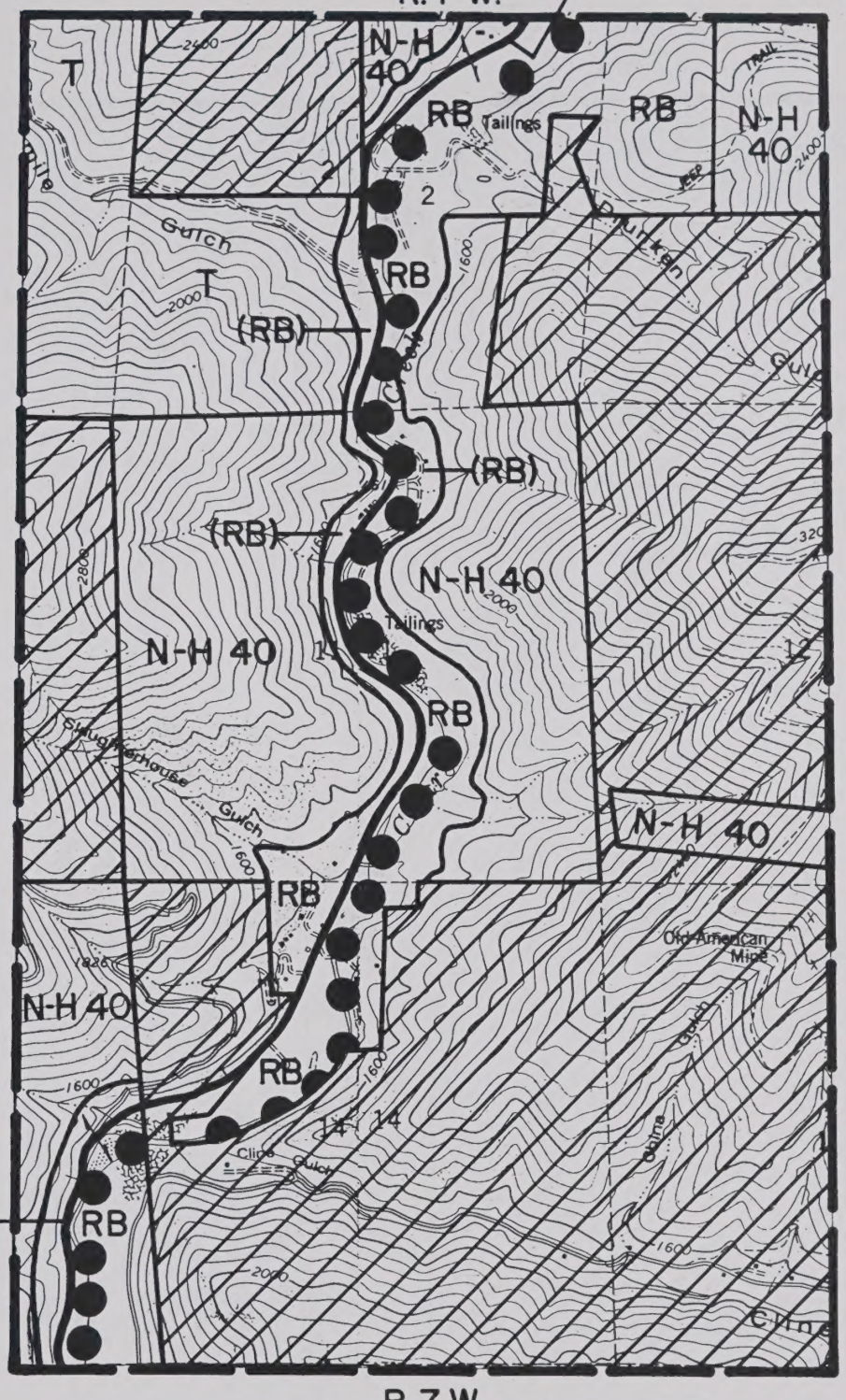
NORTH

SCALE

0 1 MILE

(FRENCH GULCH)

(FRENCH GULCH)



(FRENCH GULCH)

T. 33 N.

T. 33 N.

(FRENCH GULCH)

TRINITY MTN. RD.

SHASTA COUNTY, CA.

FRENCH GULCH - NORTH

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

NORTH

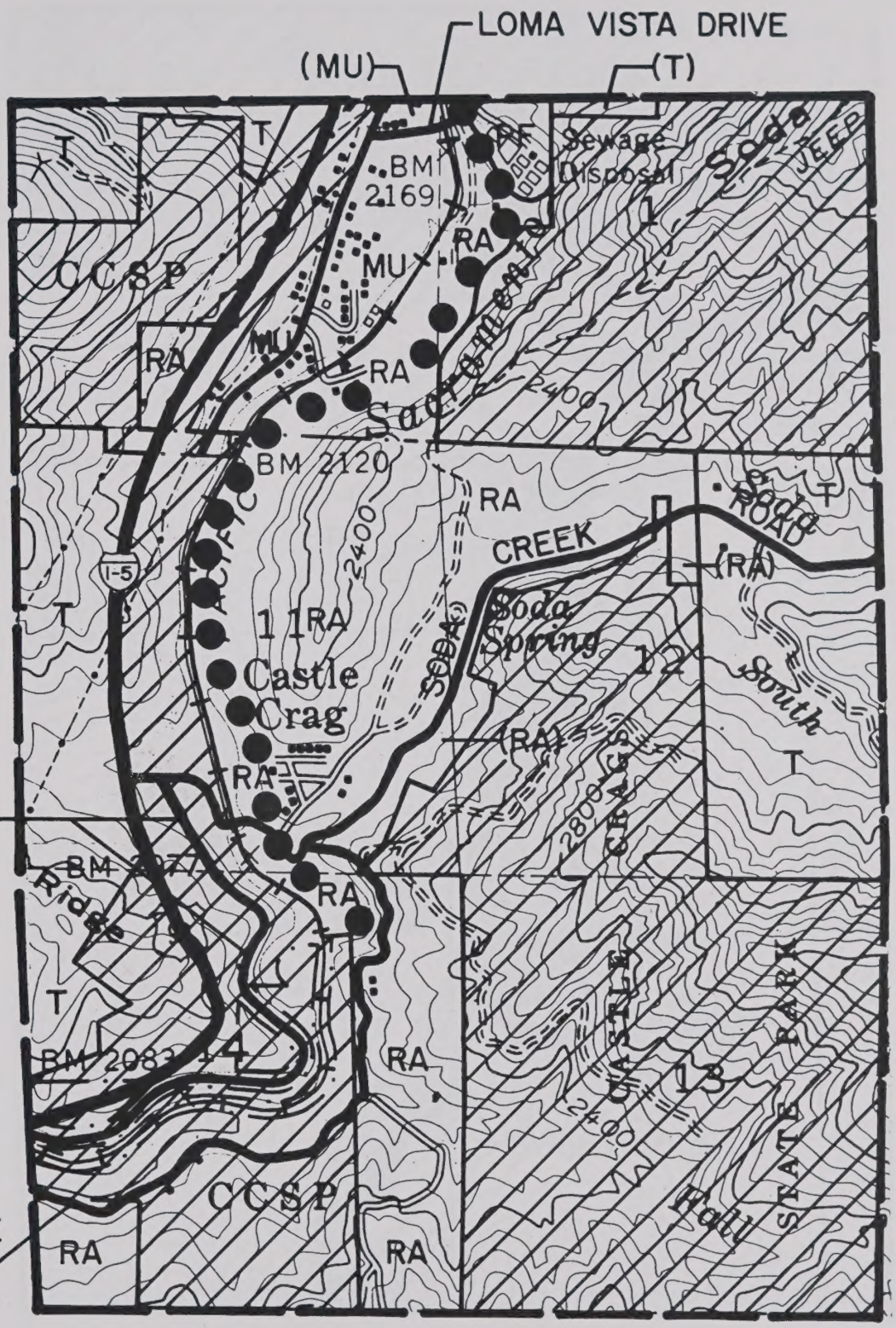
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(FRENCH GULCH NORTH)
(COMMUNITY CENTER)

(FRENCH GULCH)

(SISKIYOU COUNTY)

R. 4 W.



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(SACRAMENTO CANYON)

(SACRAMENTO CANYON)

SHASTA COUNTY, CA.

SOUTH DUNSMUIR

RURAL COMMUNITY CENTER

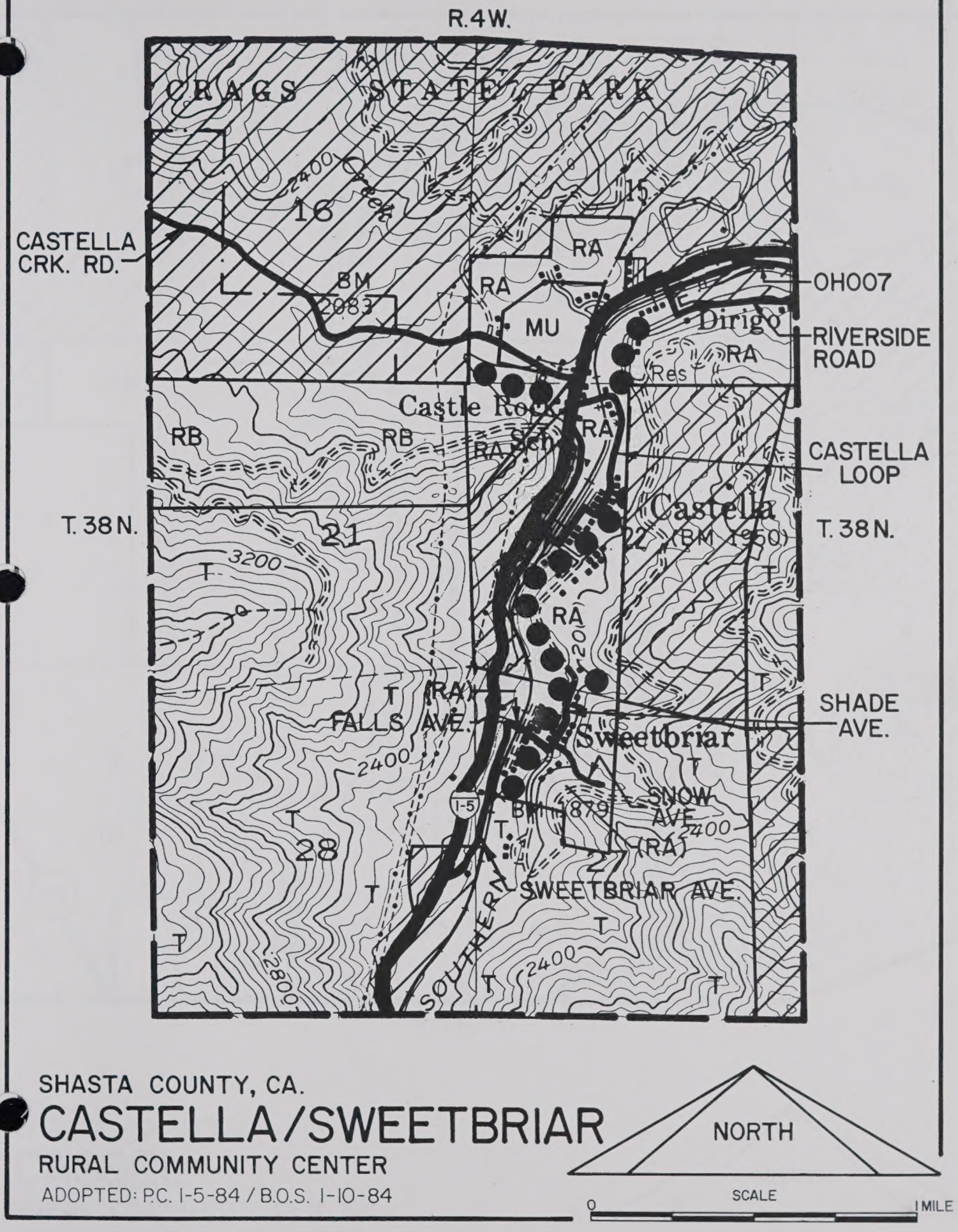
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NORTH

0 SCALE 1 MILE

(SACRAMENTO CANYON)

(SACRAMENTO CANYON)



SHASTA COUNTY, CA.

CASTELLA/SWEETBRIAR

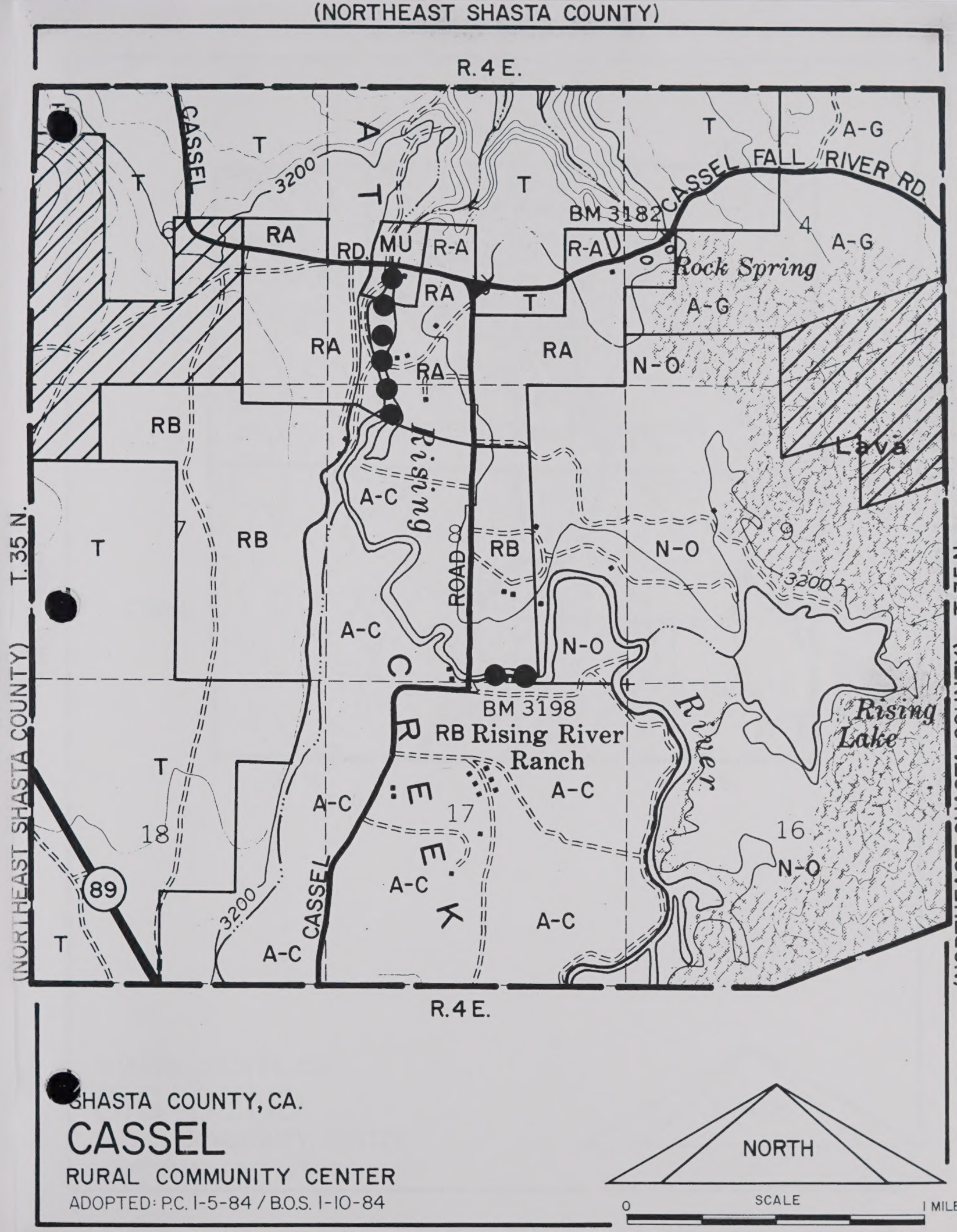
RURAL COMMUNITY CENTER

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NORTH

SCALE 0 1 MILE

(SACRAMENTO CANYON)



SHASTA COUNTY, CA.

CASSEL

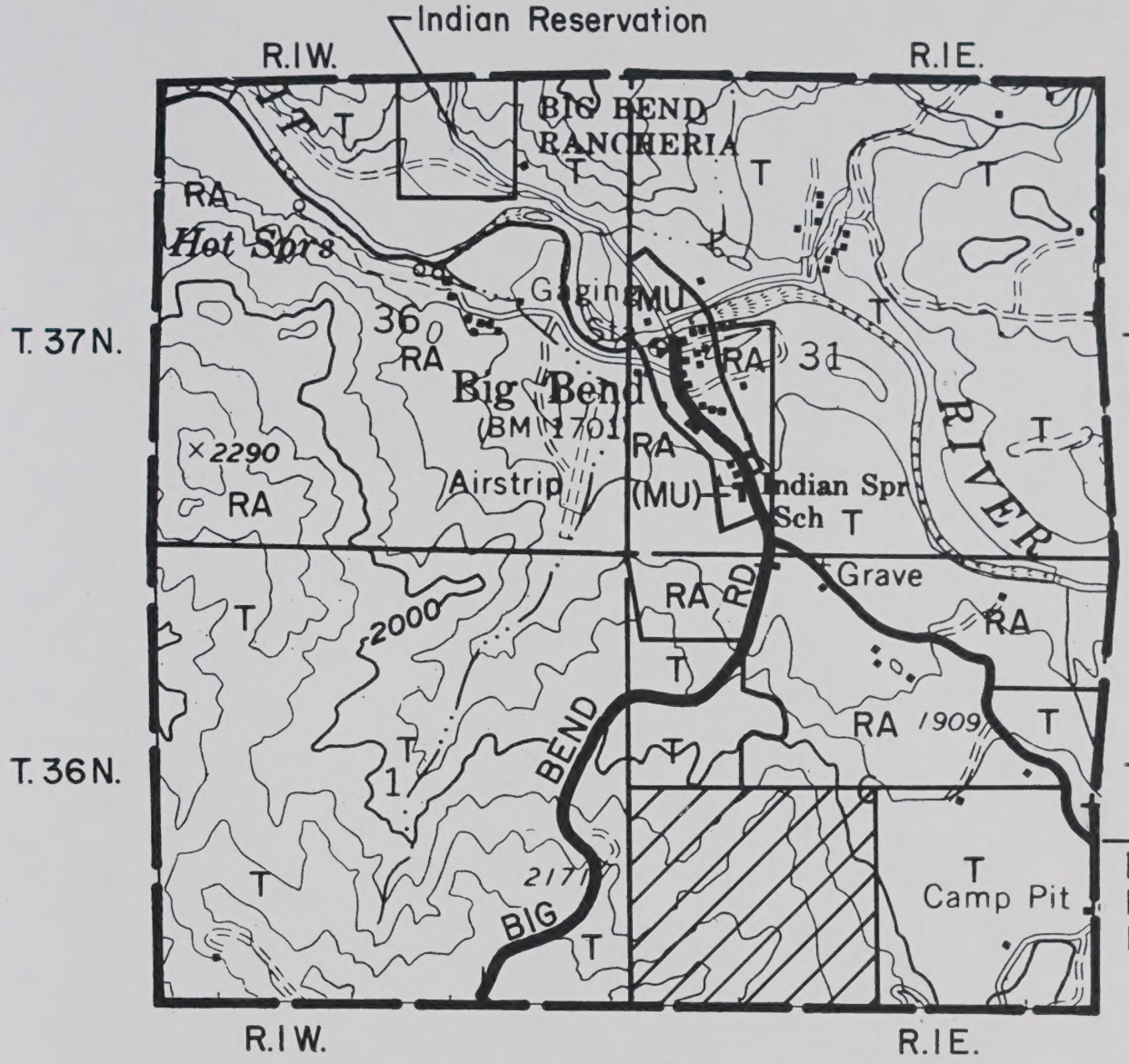
RURAL COMMUNITY CENTER

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NORTH

SCALE 0 1 MILE

(BIG BEND)



(BIG BEND)

(BIG BEND)

SHASTA COUNTY, CA.

BIG BEND

RURAL COMMUNITY CENTER

ADOPTED: P.C. 1-5-84 / B.O.S. 1-10-84

NORTH

SCALE

0 1 MILE

(BIG BEND)

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